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Hospital for Special Surgery makes its name in the international arena in more ways than one. (From the top) Dr. Oheneba Boachie-Adjei, Chief of the Scoliosis Service, with children served by the hospital he founded in Ghana; Dr. Thomas Sculco, Surgeon-in-Chief, at the 2011 Sixth International Congress of the Chinese Orthopaedic Association; and Dr. Scott Rodeo, Co-Chief of the Sports Medicine and Shoulder Service, and John Cavanaugh, PT, MEd, ATC, SCS, Clinical Supervisor, HSS Sports Rehabilitation and Performance Center, at the 2012 Summer Olympic Games in London.

AROUND THE WORLD IN MANY WAYS
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Dr. Scott Rodeo, Co-Chief of the Sports Medicine and Shoulder Service and Chair of the USA Swimming Sports Medicine Committee (left), and John Cavanaugh, PT, MEd, ATC, SCS, Clinical Supervisor at the HSS Sports Rehabilitation and Performance Center and an athletic trainer for the U.S. Olympic Open Water Swimming Team, serve as members of the U.S. Olympic medical staff for the 2012 Summer Olympic Games in London.

In May 2011, Dr. Scott Wolfe, Chief Emeritus of the Hand and Upper Extremity Service, delivers a podium presentation on a proposed universal instrument for the assessment of adult brachial plexus injuries at the XVII International Symposium on Brachial Plexus Surgery held in Lisbon, Portugal.

Dr. Scott Rodeo, Co-Chief of the Sports Medicine and Shoulder Service, delivers a keynote lecture on the future of orthopaedics at a celebration in Rio de Janeiro in honor of Hospital for Special Surgery, a new orthopaedic hospital in Brazil that is partnering with Hospital for Special Surgery.

From its home base in New York City, the Department of Orthopaedic Surgery at Hospital for Special Surgery is extending its reach to the far corners of the world. The Department’s commitment to sharing its expertise in musculoskeletal health is demonstrated through global initiatives that are improving the lives of patients, advancing the skills of physicians, and establishing collaborations that serve as a conduit of best practices and outstanding outcomes the world over.

Dr. Oheneba Boachie-Adjei, Chief of the Scoliosis Service, officiates at the ribbon-cutting ceremony of the FOCOS Orthopaedic Hospital in Accra, Ghana, in 2012. Dr. Boachie, founder and President of the Foundation of Orthopedics and Complex Spine (FOCOS), led the development and creation of the 50-bed specialty hospital, which serves underserved adults and children in his native country, Ghana, and the sub-Saharan region.

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Hospital for Special Surgery figures prominently at the 2011 Sixth International Congress of the Chinese Orthopaedic Association held in Beijing. Dr. Thomas Sculco, Surgeon-in-Chief, welcomes attendees to the SINO-HSS Symposium on total knee arthroplasty.

In May 2012, Dr. Steven Haas visits Southwest Hospital in Chongqing, China, where he performs surgery and holds case discussions with his Chinese counterparts.

Dr. William Walter, Jr., a native Australian, completed a fellowship in adult reconstruction and joint replacement surgery at Hospital for Special Surgery in 2003. Today, Dr. Walter practices at Mater Hospital in Crows Nest, New South Wales, and serves as an International Alumni Ambassador for HSS.
In 2011-2012, the Department of Orthopaedic Surgery realized significant achievements on a number of fronts. Indeed, the reach of the Department’s expertise has expanded to the far corners of the world, drawing on the clinical, academic, and scientific initiatives developed by our Service chiefs and their teams.

**A Priority on Patient Care**

Over the past four years, the Hospital’s patient volume has grown more than 36 percent and, in 2011, our orthopaedic surgeons performed nearly 26,000 surgical procedures, including more than 4,100 hip surgeries and 3,900 knee replacements. For the third year in a row, HSS was the only hospital in New York with an infection rate significantly lower than the state average for hip replacement or revision surgeries, according to the 2010 report released in September 2011 by the New York State Department of Health. Outpatient visits exceeded 218,000.

To accommodate the Hospital’s burgeoning growth, we recruited new surgeons in arthroplasty, foot and ankle, orthopaedic trauma, pediatrics, and spine, bringing the total orthopaedic surgeon faculty complement to 103. In addition, the Department includes six primary care sports medicine physicians.

The extraordinary skill of our nursing staff contributes to the outstanding outcomes of our patients. In 2011, HSS became the first hospital in New York State to achieve its third consecutive designation as a Magnet hospital – the gold standard for nursing excellence – by the American Nurses Credentialing Center. The Hospital has maintained Magnet status since 2002. Each redesignation is regarded to be much more difficult to achieve than the last, making this a truly exceptional accomplishment – one that speaks to the Hospital’s continual efforts to improve patient care.

Our patient satisfaction scores continue to validate our efforts to provide expert care with heightened attention to quality and safety. Over the last four years, inpatient satisfaction scores on “likelihood to recommend” to others have been in the 99th percentile compared to other Magnet hospitals in the national Press Ganey database. We are extremely proud of this distinction.

To optimize the management of surgical patients whose comorbidities may increase their operative risk, the Hospital has established a new Perioperative Medicine Division under the direction of Linda A. Russell, MD, a rheumatologist at HSS since 1994. Building on a longstanding protocol of providing preoperative evaluations on site of patients undergoing orthopaedic surgery in order to facilitate the best possible surgical outcomes, Dr. Russell and her colleagues are establishing guidelines for perioperative care, including those related to patients with diabetes and cardiac issues. The priorities of the Division include improving communication among key services involved in the treatment of surgical patients and addressing quality, safety, and continuity of care issues – from preoperative medical assessments to postoperative follow-up.

Keeping pace with the growing demand for our services requires a continual focus on the Hospital’s physical plant. In September 2011, we opened three new patient floors and two new inpatient operating rooms.
Our surgeons perform 2,500 orthopaedic surgeries for children and adolescents per year, and last year, young patients made nearly 18,000 visits to HSS pediatric rehabilitation therapists. In fall 2011, HSS celebrated the opening of its 7,000-square-foot, state-of-the-art CA Technologies Rehabilitation Center, improving access to pediatric rehabilitation services for surgical patients and children in the community. The new Center, which is double the size of the former facility and will accommodate more than 30,000 patient visits annually, is the first stage of the new Alfred and Norma Lerner Children’s Pavilion, a hospital-within-a-hospital that will open later this year.

2011 also marked Special Surgery’s first expansion beyond the New York area with the establishment of HSS Spine & Sport located in Jupiter, Florida. This center, which brings the same high level of rehabilitation services and patient care available at the Hospital to South Florida, was a direct response to demand by patients and physicians. Specializing in nonoperative and postsurgical care, HSS Spine & Sport encompasses professionals in the fields of spine, orthopaedics, sports rehabilitation, massage therapy, and performance training.

Scientific Significance
The Hospital’s Research Division, under Steven R. Goldring, MD, has flourished. Its current research portfolio totals $21 million, including $15.4 million in federal funding. I am pleased to report that Dr. Goldring was named the first Richard L. Menschel Research Chair at the Hospital. This chair, which was established by a $5 million gift from an anonymous donor, honors Mr. Menschel, Chairman Emeritus of HSS. Mr. Menschel has been a vital proponent of the Hospital’s focus on research, and the gift permanently endows the position of the Hospital’s Chief Scientific Officer. A strong advocate of the physician-scientist, Dr. Goldring has led HSS into a new era of clinical and translational research. In addition to the recruitment of talented scientists in the areas of arthritis and tissue degeneration, autoimmunity and inflammation, musculoskeletal integrity, and tissue engineering, regeneration and repair, Dr. Goldring has established major research objectives focused on translating basic research into new therapies for people with mobility disorders. He is also expanding the Hospital’s clinical patient registries. To date, the Hospital maintains 43 active registries with an enrollment of some 84,000 patients. Outcomes data from these registries will allow our scientists and physicians to better understand musculoskeletal diseases and conditions and ultimately help improve the standard of care.

More than 350 clinicians, clinical investigators, and basic scientists across the Department of Orthopaedics, the Division of Rheumatology, and the Research Division at HSS are addressing osteoarthritis (OA) on some level. The Hospital’s Osteoarthritis Initiative – a multidisciplinary effort that aims to achieve advances in understanding, preventing, diagnosing, and treating OA through collaboration among specialties – is well underway. In 2011, HSS hosted an international summit – Frontiers in OA Research, Prevention, and Care – led by Dr. Goldring and Timothy M. Wright, PhD, Director, Department of Biomechanics. The summit drew a multidisciplinary group of scientific leaders from around the world who shared current research, opportunities for future investigations, the newest diagnostic tools and treatment, public health strategies, and information on prevention. Topics ranged from cell and molecular biology studies, to biomechanics, epidemiology research, and clinical trials. Among
the recommendations of the Summit’s participants is a proposal to develop a classification tree that identifies OA as spontaneous or induced, and further classifies the disease based on symptoms, associated bone structural abnormalities, cartilage and related joint tissue abnormalities, and stage of disease progression.

The Hospital recently created an Integrated Osteoarthritis Diagnostic, Treatment, and Research Program – funded in part by a major gift from the Starr Foundation – to advance investigations leading to a greater understanding of this multifactorial disease and to pilot a comprehensive clinical care program that provides integrated, evidence-based surgical and nonoperative care.

The family of the late Mary and Fred Trump provided generous funding to establish the Mary and Fred Trump Institute for Implant Analysis at Hospital for Special Surgery. The new Institute invigorates the science of joint reconstruction and enables us to accelerate patient-oriented research to enhance the mobility and quality of life for countless current and future joint replacement patients.

Hospital for Special Surgery, in a coalition with Weill Cornell Medical College, University of Massachusetts Medical School, and Mathematica Policy Research, has received the distinguished Team Science Award from the Association for Clinical Research Training, American Federation for Medical Research, Association for Patient Oriented Research, and Society for Clinical and Translational Science. The award recognizes the team’s research in perioperative epidemiology, including the incidence, risk factors, trends of morbidity and mortality, and outcomes associated with different orthopaedic surgical approaches and anesthetic techniques.

Educational Endeavors
In 2011, HSS received more than 600 residency applications, the most in the Hospital’s history. From this highly competitive group, we select just eight residents. The class of 2016 represents such prestigious medical schools as Harvard Medical School, Washington University School of Medicine, Weill Cornell Medical College, and University of Virginia. Our orthopaedic fellowship program is currently training 40 fellows in all our subspecialties. We also have international clinical fellows from countries including Greece, Germany, and China.

This year, the Hospital created a House Staff Quality Council, a resident- and fellow-led initiative to look at ways to improve care at HSS. In addition, it was an active year for research with the awarding of five grants to our residents and resident research presentations at seven national professional forums. We are also pleased that one of our residents was appointed to the ACGME Residency Review Committee for Orthopaedic Surgery.

Our residents and fellows benefit from an environment that offers advanced surgical technology and a number of specialized training resources. One such example is the Hospital’s Bioskills Education Laboratory, which now offers a surgical simulation program to augment the curriculum for PGY-1 and PGY-2 residents. For the third consecutive year, our female orthopaedic surgeons and residents participated in the Perry Initiative, a mentoring program that encourages young high school women to explore the field of orthopaedic surgery and engineering.
All of our orthopaedic surgeons are on the faculty of our esteemed affiliate, Weill Cornell Medical College, and we continue to foster close academic and scientific partnerships. In December 2011, Antonio M. Gotto, Jr., MD, DPhil, stepped down as Dean and now serves as Co-Chairman of the Board of Overseers for the Medical College. On January 1, 2012, Laurie H. Glimcher, MD, one of the nation’s leading physician-scientists, succeeded Dr. Gotto as the Stephen and Suzanne Weiss Dean of Weill Cornell. Dr. Glimcher previously served as a Professor of Medicine at Harvard Medical School and directed one of the top immunology programs in the world. She is the daughter of Melvin Glimcher, an emeritus member of the HSS Board of Trustees.

**New and Noteworthy**

Jo A. Hannafin, MD, PhD, has been named to the Presidential line of the American Orthopaedic Society for Sports Medicine. Dr. Hannafin will be the first woman to be honored as President of this influential society and joins Russell F. Warren, MD, and Thomas L. Wickiewicz, MD, who are Past Presidents. Chitranjan S. Ranawat, MD, has been named President-Elect of The Hip Society.

Laura Robbins, DSW, Senior Vice President of Education and Academic Affairs and Associate Scientist at HSS, was awarded the Lifetime Achievement Award by the Association of Rheumatology Health Professionals (ARHP), a division of the American College of Rheumatology. The award, which is ARHP’s highest honor, recognizes Dr. Robbins for a career demonstrating a sustained and lasting contribution to the field of rheumatology and rheumatology health professionals.

Joseph A. Feinberg, MD, an accomplished physiatrist and electrophysiologist, was named Chief of the Hospital’s Department of Physiatry, a key collaborator with our department in the nonoperative care of the orthopaedic patient. Dr. Feinberg, who is also Co-Medical Director of the Center for Brachial Plexus and Traumatic Nerve Injury, most recently served as Director of the EMG Laboratory at HSS.

**Influencing Orthopaedics Here and Abroad**

In 2012, *U.S. News & World Report* again named Hospital for Special Surgery the No. 1 hospital in the country for orthopaedics in its 2012-13 “Best Hospitals” issue. We will continue our commitment to sharing the Hospital’s expertise in musculoskeletal health – whether here or abroad – to improve the lives of patients, advance the skills of physicians, and develop domestic and international collaborations that will serve as a conduit of best practices and outstanding outcomes the world over. As we make plans to celebrate the Hospital’s 150th anniversary in 2013, we are committed to building on our success, advancing cutting-edge research, and developing innovative approaches to diagnosis and treatment – all of which reinforces our standing as a global leader in the field.

Today, with links to countries in nearly every continent, the Department of Orthopaedic Surgery pursues partnerships that span clinical practice, educational programs, and research initiatives. On the pages that follow, you will learn about a number of our current endeavors that illustrate the Hospital’s ever-expanding role in orthopaedics worldwide.
When Thomas P. Sculco, MD, Surgeon-in-Chief, completed his orthopaedic residency training at Hospital for Special Surgery, he traveled throughout Europe for a year, studying the management of rheumatoid arthritis and reconstructive joint surgery in Finland, England, Switzerland, Germany, and Italy. “Looking at medicine from a global perspective is very important in a surgeon’s training,” says Dr. Sculco. “The experience exposes you to different treatment approaches, and you take the best of what you learn and incorporate that into your own clinical care and teaching.”

Dr. Sculco’s post-residency sojourn continues to inform his world view as leader of the number 1 ranked orthopaedic hospital in America. The Department of Orthopaedic Surgery at HSS is committed to globally sharing its expertise in musculoskeletal health. With links to countries in nearly every continent, the Department pursues partnerships and collaborations that span educational endeavors, clinical practice, and research initiatives.

“The reach of HSS is continually expanding, and today the Hospital has a significant presence in Europe, South America, and China, with new international collaborations and relationships under development,” says Dr. Sculco. “Part of our mission is to take the best practices in patient care that we have developed here and disseminate this information to centers throughout the world. We also feel it is our responsibility to educate physicians from overseas who can go back to their countries to lead or develop programs in orthopaedics.”

**Engaging in International Collaborations**

Six years after its founding by Dr. Sculco, the International Society of Orthopaedic Centers (ISOC) has become a driving force in the effort to improve orthopaedic care on a global scale. This coalition of the major orthopaedic specialty hospitals in the world encompasses a multifaceted mission: to promote scientific, clinical, and educational collaborations; to improve the quality of patient care through sharing of clinical pathways and treatments; to enhance academic programs; and to share operational measures to help sustain major orthopaedic programs.

Since its inaugural meeting of orthopaedic leaders held in New York in 2007, ISOC has expanded its purview to engage chief executive officers in the dialogue. According to Dr. Sculco, as the Society’s agendas have developed over the years, it became clear that many of the goals of the clinicians intersected with those of hospital leadership. At the 2010 meeting in Bologna, Italy, CEOs from member centers joined their physician colleagues to explore solutions to administrative challenges related to patient care, volume growth, and costs.

In 2011, ISOC established an annual six-month travelling fellowship program, naming Saseendar Shanmugasundaram, MD, a trauma fellow and junior consultant in the Department of Orthopaedics at Medical Trust Hospital in Kerala, India, as its first recipient. Dr. Shanmugasundaram spent the first two months of his fellowship at HSS, shadowing Mathias P. Bostrom, MD, Director of the Orthopaedic Surgery Residency Program. “I received good experience in total hip and total knee replacement and revision arthroplasty,” says Dr. Shanmugasundaram. “Accompanying Dr. Bostrom at outpatient clinics and assisting in the operating theater were very useful. With such a large caseload of arthroplasty patients, I was able to gain much more exposure than..."
was ever available in my earlier training.” After two months at Special Surgery, Dr. Shanmugasundaram traveled to Schulthess Klinik in Zurich, completing the fellowship at the Royal National Orthopaedic Hospital in Stanmore, Middlesex, U.K. “It was valuable to work with a number of surgeons in arthroplasty and other subspecialties of orthopaedics,” adds Dr. Shanmugasundaram. “I was able to observe different approaches for similar cases, and I studied the latest techniques each center used in managing difficult cases. It was a unique opportunity – one that could only be provided by the ISOC fellowship.” Today, Dr. Shanmugasundaram is incorporating his recent training as an assistant officer in the American College and Hospital operated by the government of Pondicherry, India, where treatment is free for patients and where there is a dearth of arthroplasty surgeons.

Nearly 7,000 miles from Special Surgery’s home in New York City, another productive collaboration has been taking place in Beijing, China, with the Chinese Orthopaedic Association (COA).

With a registered membership of more than 30,000 orthopaedic surgeons, the COA is the largest and most influential orthopaedic society in China. In 2010, HSS surgeons and bioengineers, along with surgeons from China led by Wang Yan, MD, incoming President of the COA, held a two-day SINO-HSS Symposium on Total Knee Arthroplasty. “It was fascinating,” says Timothy M. Wright, PhD, Director of Biomechanics, who participated in the planning of the program. “Our colleagues in China told us that the workshop was incredibly enriching because we focused on the indications for knee replacement, how we do knee replacements at HSS, and design issues to be considered in choosing a knee replacement.”

The success of this workshop led to an invitation by Dr. Yan to HSS to develop a more expansive program for the organization’s Sixth International Congress in 2011. Drs. Sculco, Bostrom, and Wright, with Joseph Lipman, MS, Director, Device Development, planned and conducted the program, which focused on designs and techniques for primary and revision total knee replacement. The program drew a

A Grand Opening in Ghana

“Becoming a healer was a dream I grew up with and giving back was my mission,” says Oheneba Boachie-Adjei, MD, Chief of the Scoliosis Service at Hospital for Special Surgery, and founder and President of the Foundation of Orthopedics and Complex Spine (FOCOS). Dr. Boachie spoke these words at the recent grand opening ceremony of the new 50-bed specialty FOCOS Orthopaedic Hospital, which provides comprehensive orthopaedic and rehabilitative services for adults and children in Ghana, Africa. For Dr. Boachie, who was born in Kumasi, Ghana, and immigrated to the United States in 1972, it was a dream come true. “FOCOS’s mission is to provide affordable orthopaedic care to those who would not otherwise have access to such treatment,” explains Dr. Boachie. “The patients we treat both surgically and nonsurgically have disabling musculoskeletal disorders, including complex spine deformities and pediatric orthopaedic problems.”

“As a world leader in musculoskeletal medicine, HSS is committed to national as well as international outreach,” says Louis A. Shapiro, President and Chief Executive Officer, Hospital for Special Surgery. “We are proud to have supported Dr. Boachie in his efforts to make the FOCOS Orthopaedic Hospital a reality.”

Located on 10 acres in Accra, Ghana, the FOCOS Orthopaedic Hospital is accredited to operate both inpatient and outpatient departments.
standing-room-only audience of some 400. Planning is now underway for a similar course on hip replacement to be held at the 2012 Congress, and through the efforts of Dr. Bostrom, HSS is working to further formalize educational relationships with the establishment of the HSS-China Educational Exchange.

Most recently, the Hospital partnered with Amil Par, a large managed healthcare organization in Brazil, in advance of the opening of its new orthopaedic center, Hospitalys, in Rio de Janeiro – the host city for the 2016 Summer Olympics and the 2014 FIFA World Cup. It is a perfect pairing of expertise, especially in the area of sports medicine. Scott A. Rodeo, MD, Co-Chief of the Sports Medicine and Shoulder Service, has previously served as team physician for U.S.A. Olympic Swimming in 2004 and 2008, and returned to this position in London for the 2012 Olympic Games. João Alves Grangeiro, MD, will be the Medical Director for the 2016 Olympics. Dr. Rodeo will work with Dr. Grangeiro on educational programs for the professional community who treat Olympic athletes.

This past year, Hospital for Special Surgery hosted an international osteoarthritis summit to discuss the latest information in diagnosis, treatment, research, and prevention, bringing together a multidisciplinary group of physicians, scientists, and industry leaders from the United States, Canada, Europe, and Australia. “Public health data indicate that the prevalence, impact, and economic consequences of osteoarthritis are expected to rise dramatically within the next several decades. Clearly, understanding and preventing this disease is an urgent research challenge,” says Steven R. Goldring, MD, Chief Scientific Officer at HSS and co-director of the conference.

Orthopaedic surgeons, rheumatologists, scientists, and biomechanical engineers, as well as representatives of pharmaceutical, device, and insurance industries, were among the event’s 35 speakers. “Our goal was to develop a consensus document on future directions for OA research, prevention, and treatment,” says Dr. Wright, who co-directed the event with Dr. Goldring. “Among the conclusions drawn from the summit is that the current classification system for osteoarthritis is inadequate. A classification tree was proposed that identifies osteoarthritis as spontaneous or induced, and further classifies the disease based on symptoms, associated bone structural abnormalities, cartilage and related joint tissue abnormalities, and stage of disease progression.” [Consensus statements and analysis from the summit have been published in a series of papers in the HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery, Volume 8, Issue 1.]

Improving Implants on a Global Scale

In 2011, the Hospital’s Center for Musculoskeletal Outcomes and Patient Oriented Research was selected by the FDA to facilitate the development of a joint arthroplasty registry network that would provide data across national and international boundaries. A key initiative of the Center is the formation of an International Consortium of Orthopaedic Registries (ICOR). Through HSS leadership, ICOR is creating a registry network to integrate data from international total joint arthroplasty registers to provide a worldwide view of orthopaedic patient outcomes and to compare differences among treatment options. According to Dr. Wright, ICOR complements other international cooperative efforts to foster networking and communication among those involved in the many arthroplasty registers throughout the world.
Hospital for Special Surgery’s bioengineers and colleagues in China are collaborating on the development of a total knee replacement system that addresses anatomical and functional requirements of the East Asian population. “While there are only slight variations between Caucasians and Asians in the anatomy of the knee, there are innovative refinements in a total knee prosthesis that we can recommend to improve clinical outcomes,” says Dr. Wright.

Harnessing the resources of the International Society of Orthopaedic Centers, HSS is also spearheading the development of a framework for implant retrieval analysis and working to establish common terminology for defining and reporting complications, including infections around joint replacements.

**Sharing Expertise Worldwide**

Whether here in New York or as far away as Australia, HSS orthopaedic surgeons are training their counterparts from other countries in proven approaches and the latest surgical treatments for musculoskeletal injuries and disorders. Opportunities abound for overseas physicians to come to HSS for short-term observerships, residency and fellowship training, and to attend topic-focused conferences and symposiums.

An annual international fellowship position is available in joint replacement surgery through the Stavros Niarchos Foundation – Thomas P. Sculco, MD International Orthopaedic Fellowship for a physician from Greece. In addition, the Sports Medicine and Shoulder Service offers an annual fellowship for an international physician. At the same time, Hospital faculty are frequently invited to provide training, deliver presentations, and even conduct surgery, at centers throughout the world.

“I’ve always found it very interesting that the people who come to HSS for advanced fellowship study tend to be the crème de la crème and really make a sacrifice to travel here,” says Dr. Sculco. “They are driven to excel and want to go back to their countries to be the best in the field.”

Each year, at the Hospital's alumni meeting, a former international fellow is presented with the Pier Giorgio Marchetti, MD, Award for International Achievement. Dr. Marchetti, who trained at HSS some 50 years ago and was the first recipient of the award in 2010, went

**Behind the Scenes at the Olympic Games**

As spectators in the stands at the 2012 Summer Olympics watched the U.S. swim team win medal after medal, Scott A. Rodeo, MD, kept a close eye not only on the performance of team members, but also on their physical well-being. As a former competitive swimmer, Dr. Rodeo, Co-Chief of the HSS Sports Medicine and Shoulder Service, well understands the years of dedication and sacrifice athletes make to reach this level of competition. “Performances like these are built on years of solid conditioning and intense preparation with attention to all of the numerous details that make the difference between a great athlete and an Olympic champion,” says Dr. Rodeo, Chair of the USA Swimming Sports Medicine Committee and U.S. Olympic Team Physician, in a recent blog from London. This is Dr. Rodeo’s third Olympics as a team physician.

During the recent games, Dr. Rodeo attended to a number of issues with the U.S. team. He has treated hand fractures sustained by swimmers from forceful finishes, especially in sprinters, and at least one swimmer who sustained a shoulder subluxation.
In 2012, Hospital for Special Surgery is launching a unique educational initiative with China that will enable physicians and trainees throughout the country to benefit from the Hospital’s specialized expertise and vast resources in orthopaedic surgery.

Coordinated by Dr. Mathias Bostrom at HSS and Dr. Xu Yang from Beijing Chao-Yang Hospital, one of the top-ranked hospitals in China, the Hospital for Special Surgery-China Orthopaedic Educational Exchange will provide opportunities tailored to various training levels. One component, the Orthopaedic Senior Observation Program, is a six-month program for physicians who have completed 10 years of training. During their visit to HSS, these physicians will observe surgeries and clinical practice in a particular specialty; attend Grand Rounds, educational conferences, and research lab meetings; and participate in the Bioskills Education Lab. The Orthopaedic Residency Observation Program is designed for those who are midway through their specialization training. They, too, will participate in the same observational programs offered to senior physicians.

Medical and undergraduate students and physicians may participate in the Hospital’s Academic Visitor Program. During the month-long program, visitors will be assigned to a physician at HSS who will bring them into the OR and their clinical practice for observation.

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An Educational Exchange

In 2012, Hospital for Special Surgery is launching a unique educational initiative with China that will enable physicians and trainees throughout the country to benefit from the Hospital’s specialized expertise and vast resources in orthopaedic surgery.

Coordinated by Dr. Mathias Bostrom at HSS and Dr. Xu Yang from Beijing Chao-Yang Hospital, one of the top-ranked hospitals in China, the Hospital for Special Surgery-China Orthopaedic Educational Exchange will provide opportunities tailored to various training levels. One component, the Orthopaedic Senior Observation Program, is a six-month program for physicians who have completed 10 years of training. During their visit to HSS, these physicians will observe surgeries and clinical practice in a particular specialty; attend Grand Rounds, educational conferences, and research lab meetings; and participate in the Bioskills Education Lab. The Orthopaedic Residency Observation Program is designed for those who are midway through their specialization training. They, too, will participate in the same observational programs offered to senior physicians.

Medical and undergraduate students and physicians may participate in the Hospital’s Academic Visitor Program. During the month-long program, visitors will be assigned to a physician at HSS who will bring them into the OR and their clinical practice for observation.
The Adult Reconstruction and Joint Replacement Division is composed of the Hip Service, Knee Service, and Surgical Arthritis Service. In 2011, the Division’s 20 full-time surgeons performed some 8,200 surgeries. In September 2012, the Division welcomed Seth A. Jerabek, MD. Dr. Jerabek completed his orthopaedic residency at Harvard, a fellowship in adult reconstruction at HSS, and a sports medicine fellowship at Massachusetts General Hospital. In 2013, Michael Cross, MD, who recently completed his orthopaedic residency at HSS, and is now pursuing a fellowship in adult reconstruction at Rush University Medical Center in Chicago, will join the Division as a clinician-scientist in August 2013.

Among the achievements and key initiatives of the past year were a blood management program, a new pain service approach, and a wound management program.

Under the leadership of Friedrich Boettner, MD, the Division has implemented protocols to help reduce blood loss in total knee replacement surgery and is critically reviewing the management of blood donations in patients undergoing hip replacement surgery and their likelihood of needing a blood transfusion. Since October 2009, the Blood Preservation Center has enrolled over 1,200 patients.

In September 2010, the HSS Recuperative Pain Service launched a pilot program with the Division to extend treatment of non-routine pain management issues beyond the inpatient recuperative pain service. In 2011, this expanded pain management program continued to grow with nurse practitioners, under the supervision of Vladimir N. Kramskiy, MD, a specialist in chronic pain, providing 186 inpatient consults, 60 outpatient consults, and 396 follow-up phone calls.

Amar S. Ranawat, MD, in collaboration with the Hospital’s Department of Nursing, has led the development of a protocol for the management of postoperative wound drainage in adult patients who undergo joint replacement. The protocol – which promotes effective postoperative wound care accomplished through nursing assessment, ongoing observation, and application of appropriate nursing care – facilitates timely patient discharge and decreases the risk for infection.

In 2011, members of the Division continued to receive federal grants for research, including two National Institutes of Health R01 grants. Dr. Bostrom was awarded a $1.5 million grant to study mechanisms of bone integration in joint replacement surgery; Mark P. Figgie, MD, along with Robert N. Hotchkiss, MD, and Timothy M. Wright, PhD, were awarded nearly $1.2 million to investigate the biomechanical, patient, and surgical factors that affect the performance of elbow replacements. Last year, the Division held its fourth annual research retreat focusing on six key areas: partial knee replacement, perioperative processes, bone restoration, registries/outcomes, osteoarthritis, and osteolysis.

Douglas E. Padgett, MD
Chief, Adult Reconstruction and Joint Replacement Division
Chief, Hip Service

Steven B. Haas, MD
Chief, Knee Service

Mark P. Figgie, MD
Chief, Surgical Arthritis Service

Michael M. Alexiades, MD
Friedrich Boettner, MD
Mathias P. Bostrom, MD
Robert L. Buly, MD
Charles N. Cornell, MD
Alejandro Gonzalez Della Valle, MD
Allan E. Inglis, Jr., MD
Seth A. Jerabek, MD
David J. Mayman, MD
Bryan J. Nestor, MD
Michael L. Parks, MD
Paul M. Pellicci, MD
Amar S. Ranawat, MD
Chitranjan S. Ranawat, MD
Eduardo A. Salvati, MD
Thomas P. Sculco, MD
Edwin P. Su, MD
Geoffrey H. Westrich, MD
Philip D. Wilson, Jr., MD
(Remeritus)
Russell E. Windsor, MD

2011 Surgical Volume

- 7,595 Inpatient Surgeries
- 615 Ambulatory Surgeries

Total Surgical Volume: 8,210
Total Patient Visits: 44,877

Extending Our Reach

- In June 2011, presented a number of educational programs in Beijing, China, including topics on the development of arthroplasty in the United States; improving outcomes in total hip replacement; skills of an arthroplasty surgeon; as well as live teleconferences of a total hip replacement and hip revision surgeries
- Presentations on long-term results of a rotating platform posterior stabilized total knee replacement design and the “inside-out” technique for correcting varus deformity with flexion contracture during total knee arthroplasty at the September 2011 Société Internationale de Chirurgie Orthopédique et de Traumatologie in Prague
The Total Joint Replacement Registry, established in 2002 with three surgeons, now numbers nearly 40,000 patients with participation from 18 surgeons. This robust registry enables the Division’s faculty to evaluate outcomes of implants and procedures in order to improve surgical results and guide the future of joint replacement surgery.

HSS orthopaedic surgeons perform almost four times more total hip replacement surgeries than any other institution in New York State – with more than 4,100 procedures performed in 2011. For the third consecutive year, Hospital for Special Surgery was the only hospital in New York State with an infection rate that is significantly lower than the state average for hip replacement or revision surgeries as reported in the most recent New York State Department of Health report on hospital infection rates.

To determine if a fast-track pathway for total hip replacement (THR) with the goal of a two-day discharge is safe and effective compared to the traditional pathway, the Division contrasted 149 patients undergoing unilateral, uncomplicated THR enrolled in an accelerated postoperative pathway with 134 patients enrolled in the traditional pathway. At one year, there were no differences in complications, readmissions, or reoperations between the two patient groups, and the average length of stay decreased from 4.1 to 2.6 days.

The Division’s surgeons are also exploring the use of robotic-guided navigation to help improve the outcomes of total hip arthroplasty, especially in terms of mechanical complications. Robotic-guided navigation provides quantitative data to enable a precise placement of the cup and stem, as well as acetabular bone preparation, thereby providing more predictable and reproducible results.
Computer-assisted technology is also being applied to total knee replacement surgery, in particular to improve the accuracy and precision of the tibial resection. A cadaveric study was conducted to determine the accuracy and time associated with the use of an accelerometer-based, extramedullary surgical navigation system for performing the tibial resection. Results showed that utilization of this system enables the surgeon to accurately align the tibial resection in both the coronal and sagittal planes, and there is currently an ongoing patient study to determine if it improves results.

The Hospital’s 40-year-old Surgical Arthritis Service brings together orthopaedic surgeons and rheumatologists to provide multidisciplinary care for patients with inflammatory rheumatic diseases. These patients present with some of the most complex conditions, and the outcomes of their surgical management is influenced by many factors associated with their disease. They are frequently at high risk for renal, pulmonary, cardiac, and other complications that require careful scrutiny throughout the perioperative period. At HSS, physicians and surgeons work closely together to identify the unique problems confronted in the care of these complex patients and develop a treatment plan to decrease the likelihood of perioperative complications, such as cardiac ischemia and arrhythmias, renal functional impairment, pulmonary decompensation, thromboembolic events, and wound infection.

In 2011, HSS researchers reported on their study of anti-TNF medications used to treat a variety of inflammatory diseases, including rheumatoid arthritis, and how to better time the withdrawal of these medications prior to knee replacement surgery to minimize the risk of disease flares. Investigators analyzed self-reported flares within one month of surgery as well as six-month adverse events, including surgical site infection, pulmonary embolism, deep venous thrombosis, re-operations, and infections such as pneumonia. They found no statistically significant difference in adverse events between patients who received anti-TNFs and those who did not. This information can help patients avoid inflammatory flares in the perioperative period.

Last year, the Surgical Arthritis Service conducted grand rounds focusing on the collaborative management of patients with ankylosing spondylitis (AS), including a preoperative multisystem evaluation, in order to improve patient outcomes. Participants learned of appropriate alternate treatments for heterotopic ossification, including Indocin therapy or radiation post-arthroplasty, in patients with AS, and the importance of preferential operating sequencing.

The Adult Reconstruction and Joint Replacement Fellowship Program continues to be strengthened under the leadership of Mathias P. Bostrom, MD, with nearly 120 applicants from the U.S., Canada, the U.K., and around the world for eight positions in the 2013-2014 academic year. In 2011-2012, the Division’s faculty were well-represented at six national meetings and gave some 99 presentations at these and other venues. In addition, they published over 100 publications in peer-reviewed journals.
The Foot and Ankle Service, with nine orthopaedic surgeons and one podiatrist, is the largest of its kind in the country providing specialized surgical and nonoperative expertise for fractures and dislocations, osteochondral lesions, sports injuries, ligament failure, adult flat foot deformity, and bunions and toe deformities. The Foot and Ankle Service performs over 2,000 surgeries each year, including endoscopic and minimally invasive techniques, reconstruction of foot and ankle deformities, Achilles tendon repair, and total ankle replacement.

In 2011, the Service welcomed Mark C. Drakos, MD, and Harvey Strauss, DPM, to the staff. The recruitment of Dr. Strauss, a specialist in geriatric, diabetic, and arthritic foot and ankle conditions, will enable the Service to grow and develop its nonoperative component.

Members of the Service continue to play key roles in the development and refinement of techniques to address challenging disorders of the foot and ankle, including a new total ankle replacement due out this year. A focal point of foot and ankle research at HSS is the Service-wide registry – a web-based, customized patient database that captures demographic and questionnaire data for every new patient. Supported by the Susan and Elihu Rose Foundation, the registry has 100 percent participation by Service members and, as of the end of 2011, more than 32,330 patients have been enrolled. Currently, some 20 research studies are underway using registry data.

In 2011, the Foot and Ankle Service received a $7.5 million pledge from a grateful patient to help fund foot and ankle research over the next 10 years. With the support of this generous gift, the Service will expand its research activities, including the development of a gait simulator that will enable sophisticated biomechanical testing to study, develop, and improve operative procedures.

The Foot and Ankle Service continues to provide fellows with the clinical knowledge and research skills necessary for a successful career in academic orthopaedics or private practice. Fellows are exposed to all aspects of foot and ankle care, participate in clinical and basic science research, and gain in-depth surgical experience. Foot and Ankle fellow Haydee Brown, MD, was awarded the opportunity to present a podium presentation on the potential for biological ligament repair at the 2012 Orthopaedic Research Society Annual Meeting.

In September 2011, the Service held the Rose Honorary Lecture in Foot and Ankle, presented by Jeffrey E. Johnson, MD, Chief, Foot and Ankle Service at Washington University Orthopaedics. Dr. Johnson spoke about current approaches to ankle arthritis. The lecture was followed by a one-day CME course on updates in foot and ankle attended by 85 participants.

Jonathan T. Deland, MD
Chief
Walther H. O. Bohne, MD
Mark C. Drakos, MD
Andrew J. Elliott, MD
Scott J. Ellis, MD
John G. Kennedy, MD
David S. Levine, MD
Martin J. O’Malley, MD
Matthew M. Roberts, MD
Harvey Strauss, DPM, FACFAS

Foot and Ankle Service

In 2011 Patient Care Volume

- 438 Inpatient Surgeries
- 1,544 Ambulatory Surgeries
Total Surgical Volume: 1,982
Total Patient Visits: 18,712

Extending Our Reach

- In collaboration with the Ankle and Foot Associates of the European Society of Sports Traumatology, Knee Surgery and Arthroscopy (ESSKA), the Service organized an International Congress on Cartilage Repair of the Ankle with 25 renowned surgeons and scientists from the United States, Europe, Asia, and Australia; event took place in Dublin, Ireland, in March 2012 for participants from 35 countries worldwide.
- Hosted year-long visitors from abroad, including two surgeons from Thailand.
- Developing a new treatment for arthritis of the big toe joint, which will be trialed in France in 2012 and expected to come to the United States within the next two years.
The Hand and Upper Extremity Service is a highly respected authority on the treatment of common and complex conditions of the hand, wrist, forearm, and elbow. Staffed by eight surgeons, the Service performed surgery in over 2,000 patients in 2011.

Last year, Steve K. Lee, MD, joined the staff as a full-time orthopaedic surgeon and Director of Research for the Center for Brachial Plexus and Traumatic Nerve Injury, which was launched in 2011. Dr. Lee’s particular clinical interests include brachial plexus and complex nerve surgery, hand tendon surgery, and wrist ligament reconstruction. The Center for Brachial Plexus and Traumatic Nerve Injury, the first of its kind in New York, is an innovative multidisciplinary program providing state-of-the-art diagnostic and reconstructive options for patients with injuries or dysfunction of the peripheral nerve and brachial plexus.

The Service continues to make strides in the treatment of malignant tumors of the hand and upper extremities. A recent study undertaken by faculty looking at patients undergoing surgical treatment for soft tissue sarcoma of the hand showed that repeat resection or amputation improves outcomes. This has prompted the researchers to more aggressively seek to achieve negative resection margins, using standard or modified amputations when needed, and performing repeat resections to negative surgical margins when they were not achieved at the time of initial surgery.

Patients with musculoskeletal tumors can face large bone deficiency, deformity, and nonunion. In collaboration with the Hospital’s Limb Lengthening and Complex Reconstruction Service, the Hand Service evaluated distraction osteogenesis via the Ilizarov method for reconstruction of these deficiencies allowing limb preservation and optimizing function. The researchers found that the Ilizarov method is an effective technique for limb reconstruction of bone tumors, although extended time in external fixation is required.

Registries have been established in the basal joint, distal radius, carpal tunnel, neoplasia, pediatrics, brachial plexus, and the elbow, forming the foundation of a robust research program. In 2011, the Hand and Upper Extremity Service received IRB approval on 41 research projects that will take place throughout 2012 and 2013.

In May 2011, the Service hosted its annual Lee Ramsay Straub, MD, Honorary Lecture in Hand Surgery with Marybeth Ezaki, MD, Director of Hand Surgery at Texas Scottish Rite Hospital for Children and Professor of Orthopaedic Surgery UT Southwestern Medical School, presenting on pediatric upper limb conditions.

In 2011, the Andrew J. Weiland, MD, Medal for Outstanding Research in Hand Surgery, established in 2009 by the American Society for Surgery of the Hand, was presented to James Chang, MD, of Stanford University for his studies in flexor tendon reconstruction with a focus on biomolecular modulation of tendon repair and tissue engineering.

### Extending Our Reach

- Developing a pilot program for hand and upper extremity fellows that would provide a two-week intensive training course in microsurgery in India
- Provides fellowship training for physicians from overseas, including Singapore and Ireland, with 16 fellows trained over the past five years from the U.S. and abroad
- Collaborating with orthopaedic surgeons in the United Kingdom to develop a partial wrist replacement
- Presented studies at the XVII International Symposium on Brachial Plexus Surgery held in Lisbon, Portugal, on standardized methods for reporting outcomes of brachial plexus surgery to improve the ability to compare the benefits of different surgical treatments

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Edward A. Athanasian, MD
Chief
Michelle G. Carlson, MD
Aaron Daluiski, MD
Robert N. Hotchkiss, MD
Lana Kang, MD
Steve K. Lee, MD
Andrew J. Weiland, MD
Scott W. Wolfe, MD
(Chief Emeritus)
LIMB LENGTHENING AND COMPLEX RECONSTRUCTION SERVICE

The Limb Lengthening and Complex Reconstruction Service is internationally recognized among the most comprehensive limb lengthening programs today. The first program of its kind at a major U.S. academic center, the Service provides skill, expertise, and experience on limb length equalization and deformity correction in both adults and children. Service faculty are known for their work in limb salvage surgery, reconstruction of nonunions and severe foot and ankle deformity, knee and ankle joint preservation with limb realignment, and joint distraction. The advances made possible by the Service provide potential treatments for patients who previously had no viable alternative.

In 2011, the Service made strides in several clinical areas, including working with the Department of Radiology and Imaging to develop a method to quantify bone healing by measuring pixel density on PACS system X-rays. With the Department of Nursing, the Service implemented a new protocol to improve external fixation adjustments and pin care that has been adopted by all clinical services at HSS. In addition, the Service established inpatient and outpatient physical therapy protocols for limb lengthening, tibial osteotomy, femoral osteotomy, and ankle reconstruction.

Growth continues in clinical volume and research activity, with an ongoing focus to further develop and improve upon traditional approaches and techniques that incorporate new surgical options, improved tools, and enhancements to bone healing and cartilage regeneration. Faculty are currently engaged in prospective randomized clinical trials evaluating the effect of platelet-rich plasma on bone healing during limb lengthening; a comparative study of two systems for autologous bone marrow harvesting; and a comparison of the effect of two protocols of antibiotic prophylaxis on pin tract infections. Prospective gait studies are evaluating the effect of proximal tibial osteotomy in adults and children, and another study is comparing the functional gait of limb salvage patients to amputation patients. Basic science research focuses on the analysis of the biomechanics of external fixation.

The Limb Lengthening and Complex Reconstruction Service offers one of three limb lengthening fellowships in the county. The educational program is focused predominantly on two clinical fellows who receive intensive exposure to surgical, inpatient, and outpatient clinical care. The fellowship provides an ongoing, in-depth experience in the management of patients with congenital, developmental, and post-traumatic limb deformity and leg length discrepancy. Emphasis is placed on evaluation and both nonoperative and operative management of these conditions.

In addition, the Service offers a one-year Ilizarov Research Fellowship, and in 2011, added an elective rotation for HSS residents. The Service continues to offer a clinical elective for visiting medical students and residents who participate in teaching conferences, journal clubs, and case reviews.
The Metabolic Bone Disease/Musculoskeletal Oncology Service is a consortium of basic scientists, clinical diagnosticians, and medical specialists focused on the prevention and treatment of osteoporosis, Paget’s disease, and related bone disorders. The Service brings together practitioners across clinical fields that include orthopaedics, rheumatology, physiatry, endocrinology, nephrology, and pediatrics for the treatment of metabolic bone disease.

The Service’s Osteoporosis Prevention Center – a state-of-the-art testing, diagnostic, and education facility – is one of only 14 centers nationwide to be accredited by the International Society of Clinical Densitometry. HSS physicians and nurses have developed a new clinical pathway to better identify those with bone disease and those at risk in order to map the course for proper intervention. The pathway is currently being used in candidates for spinal fusion surgery to optimize their bone health prior to and following surgery.

Service faculty conduct research that crosses basic, clinical, and translational platforms with the common focus on preservation of bone quality. Current investigations at HSS concentrate on bone biology, chemistry, and the mechanics of bone growth, including how to harness bone’s natural healing power to prevent fracture and treat diseased bone. Since its launch in 2007, the Seymour Cohn Metabolic Bone Registry has enrolled 520 participants. The goal of the registry is to collect and analyze patient data sets to identify methods to prevent and repair fragility fractures that result from osteoporosis and other metabolic bone disorders. The Service has been able to identify over 14 families – each with three generations of family members with fragility fracture – and initiate a genetic pilot study that seeks to identify possible areas of the human genome that may be contributing to decreased bone quality seen in some patients with multiple fractures.

The Service is leading a study to assess the influence of subcutaneous delivery of sclerostin neutralizing monoclonal antibody on fusion rate and bone formation in a rat posterolateral spinal fusion model. From data collected to date, HSS researchers believe that although sclerostin antibody does not increase fusion rate, it does enhance spinal fusion through dramatic increases in bone volume in this model.

The Service’s clinical research fellow completed a year-long fellowship with specific focus on the role of vitamin D on functional recovery after total hip arthroplasty and the relationship between performance tests and self-reported questionnaires. A step-out program offered by the Service enables third-year medical students to do metabolic bone research for a year. Since this program began five years ago, the Service has had at least one medical student conducting research in any given year, all of whom have gone on to pursue a residency in orthopaedics.
ORTHOPAEDIC TRAUMA SERVICE

The Orthopaedic Trauma Service has earned international recognition for its expertise in the evaluation and treatment of both acute and subacute traumatic injuries, as well as the sequelae of trauma. These include complex polytrauma involving injuries to the pelvis and the acetabulum – among the most life-threatening and difficult to treat; articular fractures; nonunion and malunion fractures that do not heal or that have healed poorly; fractures in the elderly; and complex osteotomies to correct deformity or congenital dysplasia.

In the past year, the Orthopaedic Trauma Service welcomed David S. Wellman, MD, a July 2011 graduate of the HSS Orthopaedic Trauma Fellowship program. Prior to coming on board, Dr. Wellman completed two fellowships in Europe, acquiring additional expertise in surgical hip dislocations, periacetabular osteotomies, and pelvic and acetabular trauma treated with new approaches and intraoperative 3D imaging.

In the past four years, the Medical Orthopaedic Trauma Service (MOTS) in collaboration with NewYork-Presbyterian/Weill Cornell has made important contributions to the care of geriatric patients, particularly those with hip fractures. MOTS improves care through a coordinated and multidisciplinary plan of treatment, focusing on all aspects of the patient’s care – the fracture, comorbidities, postoperative care, and rehabilitation and follow-up. A study by MOTS faculty recently published in the Journal of Orthopaedic Trauma looked at the influence of this team model on in-hospital complications in patients with pertrochanteric femur fractures. The study concluded that a multidisciplinary, collaborative model of care for patients with hip fractures decreases the incidence of postoperative inpatient complications, including new-onset urinary tract infection and arrhythmias.

Residents and fellows benefit from the three-way partnership of HSS, NewYork-Presbyterian Hospital, and Westchester Medical Center in the treatment of trauma patients, providing a remarkable experience in the management of acute trauma, fractures of the elderly, tumors, and pediatric trauma. The relationship continues to evolve, encompassing a large clinical volume, ample opportunity for research, and extraordinary exposure in the management of the more complicated polytrauma.

Research efforts include a major vascularity research project focused on identifying sources of patellar vascularity using a gadolinium-based, contrast-enhanced MRI anatomy study; assessment of the effect of patellar fracture on the vascularity of the patella; and comparing a posterior approach to an anterolateral trochanteric flip approach to hip and femoral head vascular disruption. A retrospective case control study is also underway looking at the outcomes of insufficiency fractures of the femur during long-term bisphosphonate treatment. Results of this study will help orthopaedic surgeons to analyze the recovery and outcomes for surgically treated bisphosphonate-associated proximal femur nonunions.
A leader in the field of pediatric musculoskeletal care, the Pediatric Orthopaedic Service has nine faculty members who treat thousands of infants, children, and adolescents each year with congenital, developmental, and traumatic conditions. These include scoliosis, limb length discrepancies, clubfoot, hip dysplasia, and fractures. Last year, HSS performed 2,500 surgeries, with more than 18,000 outpatient visits to Service physicians and nearly 18,000 visits to HSS pediatric rehabilitation therapists.

In 2011, the Service welcomed Ernest L. Sink, MD, a specialist in hip procedures in infants, adolescents, and young adults – who has particular expertise in periacetabular osteotomies and surgical dislocation. Dr. Sink is one of the few American surgeons to have trained in Bern, Switzerland, with Professor Reinhold Ganz, who pioneered these techniques. Dr. Sink also serves as the Co-Director of the Center for Hip Preservation.

The Pediatric Orthopaedic Service also welcomed Emily R. Dodwell, MD, MPH, in February 2012. A clinician-scientist, Dr. Dodwell specializes in pediatric trauma, cerebral palsy, and limb deformity correction, with a research focus on surgical outcomes and disparities in healthcare for pediatric orthopaedic patients.

In September 2011, the Service celebrated the opening of the CA Technologies Rehabilitation Center – the first phase of construction of the Alfred and Norma Lerner Children’s Pavilion. When the Pavilion is fully completed in fall 2012, HSS will have 31,000 square feet dedicated exclusively to pediatric musculoskeletal medicine. In collaboration with the Department of Radiology and Imaging, the Pediatric Orthopaedic Service is installing low-dose X-ray technology in the Lerner Children’s Pavilion.

The pediatric orthopaedic fellow is trained in all aspects of the field through participation in the pediatric orthopaedic clinics at HSS; fracture clinic, emergency department, NICU, and PICU at NewYork-Presbyterian/Weill Cornell; and the trauma clinic at New York Hospital Queens, and participates in a minimum of two research initiatives. Also in 2011, the Service supported a one-year full-time research fellowship for Hannah Ladendorf, a physician from Austria.

Research continues to thrive under the direction of Daniel W. Green, MD, and there are currently more than 20 studies underway. In 2011, research projects included evaluating ultrasound as an alternative to X-ray for diagnosing hip dysplasia in children six months of age, and looking at the role of preoperative pulmonary function testing in patients with adolescent idiopathic scoliosis to predict pulmonary complications associated with surgery. Service members in collaboration with scientists developed a new technique for obtaining images of growth plate injuries in children that provides computer-generated 3D models obtained from MRI to guide decisions during surgery in order to achieve optimal results.

**EXTENDING OUR REACH**

- Leon Root, MD, Honorary Lecture in Pediatric Orthopaedics presented in 2011 by Professor H. Kerr Graham, MD, University of Melbourne Professor of Orthopaedic Surgery, Director of the Hugh Williamson Gait Laboratory, and a Consultant Orthopaedic Surgeon at The Royal Children’s Hospital in Melbourne, Australia, and in 2012, presented by Francois Fassier, MD, Director of Pediatric Orthopaedic Surgery, The Montreal Children’s Hospital, and Associate Professor, Department of Surgery, Division of Orthopaedics, at McGill University, Montreal, Canada
- During the past two years, hosted six orthopaedic residents for clinical observership rotations from Estonia, Italy, Lebanon, and Venezuela, as well as orthopaedic surgeons from Australia and Germany

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**2011 Patient Care Volume**

- 591 Inpatient Surgeries - HSS
- 148 Inpatient Surgeries - NewYork-Presbyterian/Weill Cornell and New York Hospital Queens
- 2,034 Ambulatory Surgeries - HSS

Total Surgical Volume: 2,773*
Total Patient Visits: 18,418

* Total includes pediatric orthopaedic surgical cases across all HSS orthopaedic services
SCOLIOSIS SERVICE

The Scoliosis Service has a long history of excellent surgical outcomes for patients with scoliosis and other complex spinal deformities, including scoliosis that is adult idiopathic, congenital, early onset, degenerative, neuromuscular, and syndromic.

At the forefront of surgical innovations in spine deformity surgery, members of the Scoliosis Service incorporate the latest minimally invasive and motion preserving surgical alternatives to spinal fusion, the use of biologic healing agents, and newer and less invasive techniques to surgically treat a number of spinal conditions. The Service collaborates closely with the Hospital’s subspecialty services, including pulmonary, neurology, internal medicine, and anesthesiology, in order to maximize surgical success in major scoliosis and spine reconstruction procedures.

Seeing more than a thousand patients annually, the surgeons on the Scoliosis Service are also members of the Spine Care Institute at HSS, a comprehensive program that provides operative and nonoperative treatment resources for the care of scoliosis and spine patients.

In 2011, the Service instituted the John R. Cobb, MD, Fellowship, a unique one-year fellowship dedicated primarily to spinal deformity, incorporating training in the management of pathologies of the cervicothoracic-lumbosacral spine in pediatric and adult patients.

The Scoliosis Service is nationally and internationally recognized for its work in clinical and basic science research, including an active scoliosis registry and database with more than 2,000 patients enrolled to date. In 2011, the Service reported on the outcomes of new surgical techniques for spine fusion in adolescents, finding that these patients can expect to be doing well 10 years after surgery. Studies currently underway are addressing scoliosis in the adolescent athlete; dual rod instrumentation with limited fusion for treatment of progressive early onset scoliosis; genetic mapping studies for adolescent idiopathic scoliosis, including the establishment of a registry and DNA repository; evaluation of quality of life after the surgical management of neuromuscular spinal deformities; and the use of thoraco-lumbo-sacral orthoses in the treatment of adolescent idiopathic scoliosis.

On April 28, 2012, with support from Hospital for Special Surgery, private donations, and the Ghana government, a new 50-bed orthopaedic specialty hospital opened in Accra, Ghana. The brainchild of Oheneba Boachie-Adjei, MD, the founder and President of FOCOS (Foundation of Orthopedics and Complex Spine), the new hospital is dedicated to providing orthopaedic services to a community of 22 million.

Oheneba Boachie-Adjei, MD
Chief

John S. Blanco, MD
Matthew E. Cunningham, MD, PhD
Daniel W. Green, MD, FACS
Cathleen L. Raggio, MD
Bernard A. Rawlins, MD
Roger F. Widmann, MD

2011 Patient Care Volume

- 340 Inpatient Surgeries
- Total Surgical Volume: 340*
- Total Patient Visits: 2,710

* Includes scoliosis surgeries performed by surgeons who are joint members of the Pediatric and Scoliosis Services

EXTENDING OUR REACH

- Participates in the International Spine Study Group, which collects data on adult patients treated for degenerative deformity spinal conditions
- Realization of a free-standing FOCOS specialty hospital in Ghana that is a center of excellence for orthopaedic care, training of orthopaedic surgeons, and clinical research in the epidemiology of musculoskeletal diseases in the sub-Sahara region
- Presentations on treatment of Lenke 1AIS curves and on complications and revision rates for long fusions terminating at L5 versus the sacrum in adult spine deformity at the 18th International Meeting on Advanced Spine Techniques (IMAST) held in 2011 in Copenhagen, Denmark
During the past year, the Spine Service continued to further develop the multi-disciplinary Spine Care Institute and advance the Integrated Spine Research Program. The Spine Care Institute is a collaboration across multiple specialties to provide each patient with the most appropriate care plan, leveraging the focused expertise of the clinicians at Hospital for Special Surgery. The Integrated Spine Research Program pursues basic and clinical research, which will lead to evidence-based care and promote optimal outcomes for patients, and recently created the Spine Clinical Outcomes Unit (SCOUT) to develop approaches to correlate outcomes to patient expectations.

In 2011, the Service welcomed Darren R. Lebl, MD, who specializes in the treatment of complex degenerative, deformity, and traumatic spinal conditions of pediatric and adult patients, with a special interest in revision surgery.

Research remains a high priority for the Spine Service. Randomized clinical trials focus on non-fusion technologies, including a second-generation cervical total disc arthroplasty. This prosthesis represents a significant advance in biomechanics and materials. This year, Service members initiated a project to stimulate bone growth using venous blood and marrow collected from the patient at the time of surgery. A newer technique preserves the fibrin component of the blood and crosslinks the fibrin with calcium chloride to form a platelet-rich fibrin matrix. The advantages are the platelets remain intact and are embedded in an osteoconductive matrix. This technique can be used as a platform to host other components and factors.

The Service also undertook a study to analyze and identify independent risk factors for surgical site postoperative infection following posterior lumbar instrumented arthrodesis. The review, published in *The Journal of Bone & Joint Surgery*, revealed new potential independent risk factors of osteoporosis, chronic obstructive pulmonary disease, and dural tears in the setting of this procedure. Areas of new research will focus on the roles these novel factors may play in the pathogenesis of surgical site infections in the spine.

The Service continues to expand its patient registries with the addition of databases for cervical myelopathy, metabolic bone quality and fusion, lateral lumbar interbody fusion (LLIF), and spine care outcomes.

The fellowship program, which trains seven fellows each year, continues to advance. The 2011-2012 fellowship class contributed over 10 publications and more than 35 presentations at national and international conferences. One fellow, who served as the lead author of a presentation, won “Best Paper” at the Eastern Orthopaedic Association; the paper will be featured at the AAOS in 2013.
The Sports Medicine and Shoulder Service at HSS focuses on helping patients – from the little league to the big league – back to performance. A team comprised of 25 orthopaedic surgeons and 11 physicians in other medical specialties, the Service provides multidisciplinary care to athletes of all ages. In 2011, the Service performed more than 8,500 surgeries and accommodated over 80,000 patient visits. Service members are committed to a great outcome for each and every patient.

Service members are team physicians and provide medical coverage for more than 20 collegiate and professional teams, as well as athletic organizations. These teams include the New York Mets, the New York Giants, the New York Knicks, the New York Liberty, the New York Red Bulls, US Rowing, and the Association of Tennis Professionals, to name a few. Each year, the Service strengthens its relationship with the New York Road Runners, which manages the New York City Marathon, providing health professionals who support the event and conducting a series of educational programs for the organization’s members. Also, in 2011, a new relationship was initiated with Major League Soccer with a CME-accredited program tailored to physicians, physical therapists, and athletic trainers who care for elite soccer athletes.

Under the leadership of James J. Kinderknecht, MD, and John Cavanaugh, PT, MEd, ATC, SCS, Clinical Supervisor, HSS Sports Rehabilitation and Performance Center, HSS fellows and residents function as team physicians for six local area high school football teams and staff a clinic offered to all junior varsity and varsity teams in the Public School Athletic League. Dr. Kinderknecht is a member of the Primary Care Sports Medicine Service, which was formally created in 2011 under the leadership of Brian C. Halpern, MD, as Chief. Each physician on this Service began his or her career in family medicine, pediatrics, or internal medicine, before going on to further training in sports medicine.

The Sports Medicine and Shoulder Service Fellowship Program has seven accredited positions, as well as an additional non-accredited position for an international fellow. The program has trained more than 100 sports medicine leaders in institutions all over the world. The Service also offers a two-year fellowship position that permits a dedicated research year. In 2011, the Service welcomed its first primary care fellow who receives broad training in injury prevention strategies, injury evaluation, and restoration of function through rehabilitation or surgical means. Fellows are all exposed to professional, collegiate, and/or high school athletes.

The clinical skills and experience of Service members are complemented by a vigorous scientific agenda that embraces collaborations in basic and clinical research with more than 100 projects currently underway. Clinical initiatives focus primarily on knee ligament stability, shoulder stability, rotator cuff tendon healing, and articular cartilage repair. The research registries continue to grow with the collection extending our reach

- Provide ongoing fellowship training for international physicians and surgeons; in 2011 welcomed a physician from Costa Rica and, in 2012, a physician from Turkey
- Hosted 63 international visitors for a range of observerships and mentoring opportunities
- The Service is involved in the development of a relationship with HSS and the Brazil-based hospital, Amil Par, in Rio de Janeiro, where the 2014 World Cup Games and 2016 Olympic Games will be held
of intraoperative data, as well as patient-reported outcomes for ACL reconstruction surgery, total shoulder replacement, and cartilage surgery. The ACL Registry alone has more than 2,000 patients enrolled to date.

Basic science is an integral part of the Service’s research component, with a broad range of initiatives in the study of knee mechanics in collaboration with the Department of Biomechanics, the Leon Root, MD, Motion Analysis Laboratory, and the Department of Radiology and Imaging. These include studies evaluating the relationship between knee stability and knee kinematics in cadaveric models using a state-of-the-art robotic system and a knee gait simulator. Testing tables provided by the Department of Biomechanics are utilized in the evaluation of shoulder and knee mechanics.

Within its Laboratory for Soft Tissue Research, the Service has a number of novel animal research projects underway, with a major focus on the effect of mechanical load on tendon-to-bone tunnel healing in ACL reconstruction and the effect of ACL graft pre-tension on graft healing. Their work includes:

• investigating the therapeutic effects of human-derived placental adherent stromal cells for the treatment of tendon degeneration
• evaluating, in cooperation with Weill Cornell Medical College, the novel imaging technique of multiphoton microscopy to longitudinally quantify tendon healing and reorganization
• studying the use of engineered nanofiberspun scaffolds to augment soft tissue graft tendon-bone healing within ACL tunnels
• examining, in collaboration with Columbia University, the use of synthetic-braided ACL graft seeded with bone marrow stem cells as a candidate graft for ACL reconstruction
• evaluating – using a vitamin D deficient rat model they created last year – histological and mechanical properties of rotator cuff repair to determine if rotator cuff healing is superior in the vitamin D repletion group

Experiments of patellar tendon repair in a rat model conducted by the Laboratory for Soft Tissue Research suggest that immobilizing the limb for four to six weeks after surgery, rather than quickly starting physical therapy, improves healing, and that current rehabilitation protocols used for patients undergoing tendon-bone repairs – such as rotator cuff repair – may be partially to blame for the high rates of failed healing after surgery. Results of the study were reported at the 2012 annual meeting of the American Orthopaedic Society for Sports Medicine, and the Laboratory received the Cabaud Award for best basic science/laboratory research paper at the meeting.
In 2011-2012, engineers in the Department of Biomechanics, collaborating with the Hospital’s sports medicine surgeons, made great strides in two areas of research with the potential to transform the treatment of joint injuries. Both programs are founded on biomechanical principles with particular consideration for the way loads are transferred across joints.

The first initiative, led by Suzanne A. Maher, PhD, focuses on formulating materials to use in cartilage repair and replacement of the meniscus. Departing from previous work to create materials that could carry cells or growth factors into the area of a cartilage defect or be used as a scaffold in the meniscus, Dr. Maher seeks to develop synthetic implants that can be used as partial replacements for damaged cartilage tissue or as replacements for torn and damaged menisci. The challenge lies in the ability to devise a product that is able to transfer large loads across these complicated structures.

Dr. Maher and her colleagues at HSS and around the country have developed a class of hydrogel materials that approximate the properties of the cartilage and meniscus and are currently testing them in pre-clinical models. This past spring, Dr. Maher was awarded the BioAccelerate NYC Prize, which funds biomedical research that has significant commercial promise. One of five scientists selected for this honor out of 200 competing from 12 New York research institutions, Dr. Maher has also been provided with a highly experienced mentor to help with the process of commercialization and business development.

After working with the Sports Medicine Service on a number of experiments in the laboratory to recreate the measurements made by surgeons when presented with an injured knee, Carl M. Imhauser, PhD, is constructing a new device to objectively assess multi-directional knee stability. Based on laboratory experiments using a sophisticated robot, Dr. Imhauser and his colleagues are able to examine the motion of the knee in multiple planes simultaneously. This allows a clinician or physical therapist to apply combined loads in several directions, providing – for the first time – sensitive, objective measures of joint stability post ACL reconstruction.

Supported by funding from the National Institutes of Health and other sources, Dr. Imhauser and his colleagues are just completing the prototype of this measurement tool, which can collect data on joint instability, the extent of injury, and surgical restoration of stability. These data will eventually be included in the Hospital’s patient registries allowing comparison of these first ever objective measurements with the patient’s own reported outcomes from treatment.
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**Academic Director**  
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Andrew Lee, MD, PhD
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Chief, Hand Surgery

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- **Starr Chair in Tissue Engineering Research**
  adele L. Boskey, PhD
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  Edward Purdue, PhD
- **Immunology and Inflammation Fellowship**
  Edward Purdue, PhD
The orthopaedic surgeons at Hospital for Special Surgery are regularly cited for their professional achievements and outstanding contributions to musculoskeletal medicine, research, and education. They manage the care of numerous major professional sports teams and organizations, hold leadership positions and serve on committees for national and international organizations and professional societies, and serve on editorial boards and as reviewers for numerous peer-reviewed journals.

### Awards and Special Recognition

**Answorth A. Allen, MD**  
Head Team Orthopaedist, New York Knicks  
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Consultant, Major League Baseball  
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Spinal Consultant, National Hockey League Players’ Association

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Team Physician, U.S. Davis Cup Tennis Team  
Head Orthopaedic Consultant, U.S. Open Tennis  
Team Physician and Medical Director,  
Long Island Ducks Minor League Baseball Team

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Award of Excellence for Scientific Exhibit,  
American Academy of Orthopaedic Surgeons Annual Meeting  
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Team Physician, Long Island Ducks  
Minor League Baseball Team  
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Stephen J. O’Brien, MD, MBA
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Study Group, Shriner's Pediatric Hand Surgery

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Education Committee, American Orthopaedic Association

Joshua S. Dines, MD
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Marci Anne Goolsby, MD
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Daniel E. Green, MD, FACS
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Board Member, New York State Society of Orthopaedic Surgeons
New York Representative,
American Academy of Orthopaedic Surgeons
Evaluation Committee,
American Academy of Orthopaedic Surgeons
Division of Socio-Medical Economics Committee on
Interspecialty, Medical Society of the State of New York
Representative to the American College of Surgeons for the
Pediatric Orthopaedic Society of North America
Advocacy Committee,
Pediatric Orthopaedic Society of North America
Advocacy and Public Relations Committee and Patient
Education Committee, Scoliosis Research Society

Andrew Grose, MD
Faculty, AO North America
Volunteer Surgeon, Foundation for
Orthopaedics and Complex Spine

Steven B. Haas, MD
Program Chair and New York Coordinator,
John N. Insall Travelling Fellows, The Knee Society

Brian C. Halpern, MD
Founding Member and Past President,
American Medical Society for Sports Medicine
Past President, Foundation of the American Medical Society
for Sports Medicine

Jo A. Hannafin, MD, PhD
President Elect; Board of Trustees and Secretary; and Vice
President, American Orthopaedic Society of Sports Medicine
Board of Trustees; Educational Grants Committee; Nominating
Committee, Orthopaedic Research and Education Foundation
Vice President, Board of Trustees, National Rowing Foundation
Medical Commission, International Rowing Federation
Executive Committee, Herodicus Society
Health Study Section, Skeletal Biology Structure and
Regeneration Section

David L. Helfet, MD
Board of Trustees, Hospital for Special Surgery
Trustee, AO Foundation
Chair Emeritus, Clinical Investigation and Documentation,
AO Foundation Technical Commission, AO North America,
AO Foundation
Christopher J. Hernandez, PhD
Steering Committee, Sun Valley Workshop in Musculoskeletal Biology, International Bone and Mineral Society
Chair, Poster Competition, Society of Hispanic Professional Engineers

Robert N. Hotchkiss, MD
Consultant in Orthopedic Surgery, Burke Rehabilitation Hospital

Lana Kang, MD
Diversity Committee and Government Affairs Committee, American Society for Surgery of the Hand
Young Members Committee, Medical Society of the State of New York

Bryan T. Kelly, MD
OLC Education Committee, Arthroscopy Association of North America

Osric S. King, MD
Board of Directors, Foundation of the American Medical Society for Sports Medicine

Joseph M. Lane, MD
Chair, Study Section, Special Grants Review Committee, National Institute of Arthritis and Musculoskeletal and Skin Diseases
Chair, MOAC Recertification Program American Academy of Orthopedic Surgeons

Steve K. Lee, MD
Chair, Public Education Committee; Commercial Support Committee; Engagement Task Force; Leader, Subgroup on Transparency and Equitability, American Society for Surgery of the Hand
Lecturer and Mock Oral Examiner, The Maine Orthopaedic Board Review Course

Dean G. Lorich, MD
Technical Commission, Teaching Faculty, and Osteoporosis Task Force, AO-ASIF

Suzanne A. Maher, PhD
Biomedical Engineering Committee, American Academy of Orthopaedic Surgeons
Topic Chair, 2012 and 2013 Annual Meeting of the Orthopaedic Research Society

Robert G. Marx, MD, MSc, FRCSC
Board of Directors, International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

Douglas E. Padgett, MD
Board Member-at-Large and Member, Committee on Education, American Association of Hip and Knee Surgeons
Program Committee, 2010-2012 Annual Meeting, American Academy of Orthopaedic Surgeons

Michael L. Parks, MD
President, New York State Society of Orthopaedic Surgeons
Member-at-Large, Board of Directors, American Association of Hip and Knee Surgeons

Andrew D. Pearle, MD
Arthroscopy Committee, International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine
Technology Committee, American Orthopaedic Society for Sports Medicine

Rock G. Positano, DPM, MSc, MPH
Chair, Board of Trustees, and Deputy Chairman, Medicine Board, New York College of Podiatric Medicine
Board of Directors, Children’s Health Fund

Hollis G. Potter, MD
Research Committee, American Orthopaedic Society for Sports Medicine
Program Committee, International Society for Magnetic Resonance in Medicine
ACL Study Group

Cathleen L. Raggio, MD
Public Relations Committee, Orthopaedic Research Society
Grant Review Committee, Orthopaedic Research and Education Foundation

Amar S. Ranawat, MD
Chairman, Technical Exhibits Committee, Eastern Orthopaedic Association
Consultant Orthopaedic Surgeon, Bronx Veterans Administration Medical Center

Anil S. Ranawat, MD
Master Instructor, Hip and Knee Course, Arthroscopy Association of North America

Chitranjan S. Ranawat, MD
Past President: The Knee Society; New York Academy of Medicine; New York Society for Surgery of the Hand; American Association of Hip and Knee Surgeons

Bernard A. Rawlings, MD
Examiner, American Board of Orthopaedic Surgery

Matthew M. Roberts, MD
Postgraduate Education and Training Committee and Resident, Candidate, and Fellow Committee, American Orthopaedic Foot & Ankle Society

Leon Root, MD
Chairman, Orthopaedic Section, New York Academy of Medicine

S. Robert Rozbruch, MD
President, Limb Lengthening and Reconstruction Society
Secondary School Committee, Undergraduate Admissions, University of Pennsylvania

Eduardo A. Salvati, MD
Past President, American Hip Society
Past Secretary Treasurer, International Hip Society
David M. Scher, MD  
President, Pediatric Orthopaedic Club of New York  
History Committee, Pediatric Orthopaedic Society of North America  

Thomas P. Sculco, MD  
Governing Board, Salzburg Medical Seminar International  
Steering Committee, Salzburg Weill Cornell Seminars  
Honorary Member, Austrian Orthopaedic Association  
Executive Director and Founder, International Society of Orthopaedic Centers  
Board of Advisors, Columbia University Medical Center  
Ex-Officio Member, Education Unit Committee,  
Weill Cornell Medical College  
Vice Chair, Arthritis Foundation  
Liaison, Board of Trustees and Arthritis Foundation; Patient Education Committee; Aaos Adult Reconstruction-Hip Program Subcommittee; Aaos Representative, American Geriatric Society; Interdisciplinary Leadership Group; Director, Nominating Committee Task Force; and Fellowship Leadership Program Task Force, American Academy of Orthopaedic Surgeons  
Founding Member, Executive Board, The Knee Society  
Order of Merit and OREF Shands Circle, Orthopaedic Research and Education Foundation  
Chairman, Membership Committee, The Hip Society  
Medical and Scientific Committee, Arthritis Foundation  
Board of Trustees, Carnegie Hall  

Beth E. Shubin Stein, MD  
Program Committee and Program Chair 2014, American Orthopaedic Society for Sports Medicine  

Jennifer L. Solomon, MD  
Women’s Sports Medicine Committee, Association of American College of Sports Medicine  

Harvey Strauss, DPM, FACFAS  
Board of Directors, New York Division, New York State Podiatric Medical Association  

Edwin P. Su, MD  
Hip Program Subcommittee, American Academy of Orthopaedic Surgeons  

Marjolein van der Meulen, PhD  
Secretary, Orthopaedic Research Society  
Charter Member, Study Section, Skeletal Biology Structure and Regeneration, National Institutes of Health  
Steering Committee, International Bone and Mineral Society, Sun Valley Workshop in Musculoskeletal Biology  
Panel Member, The Boston Seminar: Reaching out to Dutch Academics in the Northeast of the USA, organized by The Netherlands Consulate General in New York  
Panel Member, Women in Science Panel, Women in Leadership Conference, Yale University  

Russell F. Warren, MD  
2011 Distinguished Clinician Educator Award, American Orthopaedic Association  
Founding Member and Past President, American Shoulder and Elbow Surgeons  
Past President, American Orthopaedic Society for Sports Medicine  
Past President, Herodicus Society  
Board of Trustees, Hospital for Special Surgery  
ACL Study Group  

Andrew J. Weiland, MD  
Chair, American Foundation for Surgery of the Hand  
Past President, International Bone Research Association  
Nominating Committee, American Society for Surgery of the Hand  
Board of Trustees, The Journal of Bone & Joint Surgery  

Geoffrey H. Westrich, MD  
Board Member, Program Committee Chairman, and Member, Finance Committee, Eastern Orthopaedic Association  

Thomas L. Wickiewicz, MD  
Board of Trustees, Medical Publishing Group, American Orthopaedic Society for Sports Medicine  
Treasurer, American Journal of Sports Medicine  

Riley J. Williams, III, MD  
Research and Education Committees, American Orthopaedic Society for Sports Medicine  
Technology Committee, American Shoulder and Elbow Society  
ACL Study Group  

Russell E. Windsor, MD  
Examiner, American Board of Orthopaedic Surgery  
Past President, The Knee Society  

Scott W. Wolfe, MD  
Secretary, New York Society for Surgery of the Hand  
Electronic Information Committee, American Society for Surgery of the Hand  

Timothy M. Wright, PhD  
Roundtable on Opportunities and Challenges in Musculoskeletal Biology and Diseases, National Institute of Arthritis and Musculoskeletal and Skin Diseases  
Education and Program Committees, The Knee Society  
Reviewer, Centers of Research Translation, National Institute of Arthritis and Musculoskeletal and Skin Diseases  
Co-Chair, HSS Experience in Total Knee Arthroplasty, Chinese Orthopaedic Association Annual Meeting  
Education and Program Committees, The Knee Society
2011-2012 NOTABLE ACHIEVEMENTS

EDITORIAL APPOINTMENTS

Edward A. Athanasian, MD

John S. Blanco, MD
Reviewer, Journal of Pediatric Orthopaedics

Oheneba Boachie-Adjei, MD
Board of Associate Editors, Spine

Mathias P. Bostrom, MD
Editorial Board, HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery

Lisa R. Callahan, MD
Editorial Advisor, Journal of Women's Health; Women's Health Advisor; Food and Fitness Advisor

Michelle G. Carlson, MD
Editorial Board, HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery
Reviewer: Journal of Hand Surgery; Journal of Hand and Microsurgery; Sports Health Journal

Charles N. Cornell, MD
Editor-in-Chief and Advisory Board, HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery
Senior Associate Editor, Clinical Orthopaedics and Related Research

Matthew E. Cunningham, MD, PhD
Reviewer, Clinical Orthopaedics and Related Research

Jonathan T. Deland, MD
Editor-in-Chief, Foot and Ankle Section, Orthopaedia
Associate Editor, Foot and Ankle Journal

David M. Dines, MD
Treasurer and Board of Trustees, Journal of Shoulder and Elbow Surgery

Joshua S. Dines, MD
Chief Social Media Editor, Journal of Shoulder and Elbow Surgery
Editorial Board, The American Journal of Orthopedics

Scott J. Ellis, MD

Stephen Fealy, MD
Reviewer, American Journal of Sports Medicine; Journal of Shoulder and Elbow Surgery

Joseph H. Feinberg, MD
Editorial Board, HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery

Austin T. Fragomen, MD
Reviewer, Clinical Orthopaedics and Related Research

Steven R. Goldring, MD
Associate Editor, Arthritis Research & Therapy

Daniel W. Green, MD, FACS
Editor, Orthopaedics Section, Current Opinion in Orthopaedics
Consultant Reviewer: Journal of Pediatric Orthopaedics; Clinical Orthopaedics and Related Research
Reviewer, Spine

Lawrence V. Gulotta, MD
Editorial Board, HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery

Jo A. Hannafin, MD, PhD

Russel C. Huang, MD
Editorial Board, HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery

Lana Kang, MD
Reviewer: Clinical Orthopaedics and Related Research; Journal of Hand Surgery

Anne M. Kelly, MD
Reviewer, The American Journal of Sports Medicine

Joseph M. Lane, MD
Editorial Board: HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery; Bone; Journal of Arthroplasty; Journal of Orthopaedic Research; Spine

Alejandro Leali, MD
Senior Associate Editor, HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery

Steve K. Lee, MD
Associate Editor, Journal of Hand Surgery
Contributing Editor, Yearbook of Hand and Upper Limb Surgery
Editorial Board, HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery

David S. Levine, MD
Editorial Board, HSS Journal: The Musculoskeletal Journal of Hospital for Special Surgery
ADULT RECONSTRUCTION AND JOINT REPLACEMENT DIVISION


Chotai PN, Su EP. Fracture of a titanium sleeve-encased third generation ceramic liner in a modern THA. Orthopedics 2011.


Dines JS. An analysis of the hip and knee reconstruction section of the orthopedic in-training examination. Orthopedics 2011.


Dy CJ, Cross MB, Ostahr DC, Parks ML, Green DW. What opportunities are available for resident involvement in national orthopedic and subspecialty societies? Orthopedics 2011.


Nam D, Rebolledo BJ, Su EP. The safety and efficacy of one-stage bilateral metal-on-metal hip resurfacing arthroplasty. *Hip International* 2012.


Padgett DE, Kinkel S. Cancellous impaction grafting in femoral revision THA. *Orthopedics* 2011.


2011-2012 Selected Publications


**Foot and Ankle Service**


**HAND AND UPPER EXTREMITY SERVICE**


**Limb Lengthening and Complex Reconstruction Service**


Harbacheuski R, Fragomen AT, Rozbruch SR. Does lengthening and then plating (LAP) shorten duration of external fixation? *Clinical Orthopaedics and Related Research* 2011.


**Metabolic Bone Disease/Musculoskeletal Oncology Service**


DiCarlo EF, Kahn LB. Inflammatory diseases of the bones and joints. *Seminars in Diagnostic Pathology* 2011.


Erdem I, Truumees E, van der Meulen MC. Simulation of the behavior of the L1 vertebra for different material properties and loading conditions. *Computer Methods in Biomechanics and Biomedical Engineering* 2011.


Lane JM. Osteoporosis and fracture risk. *Orthopedics* 2011.


Lynch ME, Main RF, Xu Q, Schmicker TL, Schafffer MB, Wright TM, van der Meulen MC. Tibial compression is anabolic in the adult mouse skeleton despite reduced responsiveness with aging. *Bone* 2011.


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ORTHOPAEDIC TRAUMA SERVICE


Lane JM. Bisphosphonate use for ≥5 years increased risk for subtrochanteric or femoral shaft fractures. The Journal of Bone & Joint Surgery (Am) 2011.

Lane JM. Osteoporosis and fracture risk. Orthopedics 2011.


Unnanuntana A, Mait JE, Shaffer AD, Lane JM, Mancuso CA. Performance-based tests and self-reported questionnaires provide distinct information for the preoperative evaluation of total hip arthroplasty patients. The Journal of Arthroplasty 2012.


**PEDIATRIC ORTHOPAEDIC SERVICE**


Dy CJ, Cross MB, Osbahr DC, Parks ML, Green DW. What opportunities are available for resident involvement in national orthopedic and subspecialty societies? Orthopedics 2011.


**SCOLIOSIS SERVICE**


Dy CJ, Cross MB, Osbahr DC, Parks ML, Green DW. What opportunities are available for resident involvement in national orthopedic and subspecialty societies? Orthopedics 2011.


Kim HJ, Yagi M, Nyugen J, Cunningham ME, Boachie-Adjei O. Combined anterior-posterior surgery is the most important risk factor for developing proximal junctional kyphosis in idiopathic scoliosis. *Clinical Orthopaedics and Related Research* 2011.


**SPINE SERVICE**


Lane JM. Bisphosphonate use for ≥5 years increased risk for subtrochanteric or femoral shaft fractures. *The Journal of Bone & Joint Surgery (Am)* 2011.

Lane JM. Osteoporosis and fracture risk. *Orthopedics* 2011.


Unnanuntana A, Mait JE, Shaffer AD, Lane JM, Mancuso CA. Performance-based tests and self-reported questionnaires provide distinct information for the preoperative evaluation of total hip arthroplasty patients. The Journal of Arthroplasty 2012.


**SPORTS MEDICINE AND SHOULDER SERVICE**


Chaudhury S, Dines JS, Delos D, Warren RF, Voigt C, Rodeo SA. The role of fatty infiltration in the pathophysiology and outcomes of rotator cuff tears. *Arthritis Care & Research* 2012.


Heyse TJ, Chong LR, Davis J, Boettner F, Haas SB, Potter HG. MRI analysis of the component-bone interface after TKA. *Knee* 2011.


Neviser AS, Hettrich CM, Dines JS, Lorich DG. Rate of avascular necrosis following proximal humerus fractures treated with a lateral locking plate and endosteal implant. Archives of Orthopaedic and Trauma Surgery 2011.


Voos JE, Dines JS, Dines DM. Arthroplasty for fractures of the proximal part of the humerus. *Instructional Course Lectures* 2011.


**DEPARTMENT OF BIOMECHANICS**


Erdem I, Trumeees E, van der Meulen MC. Simulation of the behaviour of the L1 vertebra for different material properties and loading conditions. *Computer Methods in Biomechanics and Biomedical Engineering* 2011.


Schroder DT, Kelly NH, Wright TM, Parks ML. Retrieved highly crosslinked UHMWPE acetabular liners have similar wear damage as conventional UHMWPE. *Clinical Orthopaedics and Related Research* 2011.


HOSPITAL FOR SPECIAL SURGERY
2011-2012 ORTHOPAEDIC SURGERY GRADUATING RESIDENTS

Front row, from left: Dr. Demetris Delos, Dr. Mark A. Schrumpf, Dr. Thomas P. Sculco, Dr. Mathias P. Bostrom, Dr. Constantine A. Demetracopoulos, Dr. Dennis S. Meredith, Dr. Edward V. Craig; back row, from left: Dr. Kristofer J. Jones, Dr. Curtis A. Mina, Dr. Keith R. Reinhardt, Dr. Denis Nam, Dr. Michael B. Cross

Academic Leadership
Thomas P. Sculco, MD, Surgeon-in-Chief
Mathias P. Bostrom, MD, Program Director, Orthopaedic Surgery Residency Program
Edward V. Craig, MD, MPH, Associate Program Director, Orthopaedic Surgery Residency Program
Alejandro Leali, MD, PGY-1 Faculty Mentor

2011-2012 Orthopaedic Surgery Graduating Residents
Michael B. Cross, MD, Joint Replacement Surgery Fellowship, Rush University Medical Center
Demetris Delos, MD, Sports Medicine Fellowship, Hospital for Special Surgery
Constantine A. Demetracopoulos, MD, Foot and Ankle Fellowship, Duke University Hospital
Kristofer J. Jones, MD, Sports Medicine Fellowship, Hospital for Special Surgery
Dennis S. Meredith, MD, Spine Fellowship, The Rothman Institute at Jefferson, Thomas Jefferson University
Curtis A. Mina, MD, Spine Fellowship, Norton Leatherman Spine Center
Denis Nam, MD, Adult Reconstruction and Joint Replacement Fellowship, Hospital for Special Surgery
Keith R. Reinhardt, MD, Arthroplasty Fellowship, Brigham and Women’s Hospital
Mark A. Schrumpf, MD, Shoulder and Elbow Fellowship, California Pacific Medical Center

Nancy Kane Bischoff Mentor Award
Bernard A. Rawlins, MD

Samuel Delgado, CST, Award for Outstanding Educator and Mentor to Residents in the OR
Kathleen Forson, CST

Richard S. Laskin, MD, Young Attending Award
Anil S. Ranawat, MD

Jean C. McDaniel Award for Professionalism, Ethics and Peer Leadership
Michael B. Cross, MD

Lewis Clark Wagner, MD, Award for Excellence in Orthopaedic Clinical/Translational Research
Keith R. Reinhardt, MD
Intra-articular Continuously-Infused Ropivacaine vs. Epidural Plus Femoral Nerve Block for Pain Control Following Total Knee Arthroplasty: A Prospective, Randomized, Double-Blinded Trial

Russell F. Warren, MD, Award for Excellence in Orthopaedic Basic/Translational Research
Michael B. Cross, MD
Parathyroid Hormone and Alendronate Reduce Fractures and Alter Bone Quality in an oim/oim Mouse Model of Osteogenesis Imperfecta

Philip D. Wilson, Jr., MD, Teaching Award
Charles N. Cornell, MD
Adult Reconstruction and Joint Replacement Division
Thomas J. Heyse, MD
Stephen Kayiaros, MD
Bryan R. King, MD, PhD
Nader A. Nassif, MD
Danyal H. Nawabi, FRCS (Ortho)
Jay J. Patel, MD
Christine Marie Pui, MD
Adam J. Rana, MD

Center for Hip Preservation
Gregory G. Klingenstein, MD

Foot and Ankle Service
Haydee C. Brown, MD
Amgad Mohammed Haleem Ahmed Amin, MBBCh, MS
Omar Saleem, MD, MSPT

Hand and Upper Extremity Service
Ashley C. Cogar, MD
Edward S. Moon, MD
Tan Meng Kiat David, MBBS
Michael C. Vance, MD

Limb Lengthening and Complex Reconstruction Service
Neville Brian Flowers, MD, MPT
Raul A. Kuchinad, MD, FRCS

Metabolic Bone Disease/ Musculoskeletal Oncology Service
Anish Govind Radhakrishnan Potty, MBBS, MRCS

Stavros Niarchos Foundation International Fellowship
Theophanis Vasilakakos, MD

Orthopaedic Trauma Service
Louis Francis Amorosa, Jr., MD
Olivia C. Lee, MD
Christopher Searles Smith, MD

Pediatric Orthopaedic Service
Emmanouil Morakis, MD

Scoliosis/Spine Service
Woong Cho, MD, PhD
David A. Essig, MD
Michael Joseph Faloon, MD, MS
(John R. Cobb Fellowship)
Andrew S. Lee, MD, PhD
Abhijit Yuvaraj Pawar, MBBS, MS
Gangadhara Naga Raghavendran Seethala, MBBS, MS
Gbolabo Sokunbi, MD

Sports Medicine and Shoulder Service
Michael Angeline, MD
Albert O. Gee, MD
Xinning Li, MD
Travis Gardner Maak, MD
Burak Yagmur Ozturk, MD
Cecilia Pascual Garrido, MD
Miho Jean Tanaka, MD
Bryan August Warme, MD

Philip D. Wilson, MD, Award for Excellence in Orthopaedic Surgery Research
Danyal H. Nawabi, FRCS (Ortho)

Unexplained Pain in Failed Metal-on-Metal Hip Arthroplasty: A Retrieval, Histological and Imaging Analysis
DEPARTMENT OF ORTHOPAEDIC SURGERY

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Clinical Director
Charles N. Cornell, MD
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Academic Director and Program Director,
Orthopaedic Surgery Residency Program
Mathias P. Bostrom, MD
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ORTHOPAEDIC SURGERY SERVICES

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Steven B. Haas, MD, Chief, Knee Service
212.606.1852
Mark P. Figgie, MD, Chief, Surgical Arthritis Service
212.606.1932

Foot and Ankle Service
Jonathan T. Deland, MD, Chief
212.606.1665

Hand and Upper Extremity Service
Edward A. Athanasian, MD, Chief
212.606.1962

Limb Lengthening and Complex Reconstruction Service
S. Robert Rozbruch, MD, Chief
212.606.1415

Metabolic Bone Disease/
Musculoskeletal Oncology Service
Joseph M. Lane, MD, Chief
212.606.1172

Orthopaedic Trauma Service
David L. Helfet, MD, Chief
212.606.1888

Pediatric Orthopaedic Service
Roger F. Widmann, MD, Chief
212.606.1325

Scoliosis Service
Oheneba Boachi-Adjei, MD, Chief
212.606.1948

Spine Service
Frank P. Cammisa, Jr., MD, Chief
212.606.1946

Sports Medicine and Shoulder Service
David W. Altchek, MD, Co-Chief
212.606.1909
Scott A. Rodeo, MD, Co-Chief
212.606.1513

Adult Ambulatory Care Center
Alejandro Leali, MD, Medical Director
212.606.1433

Department of Biomechanics
Timothy M. Wright, PhD, Director
212.606.1093

Research Division
Steven R. Goldring, MD, Chief Scientific Officer
212.606.2394
From its home base in New York City, the Department of Orthopaedic Surgery at Hospital for Special Surgery is extending its reach to the far corners of the world. The Department’s commitment to sharing its expertise in musculoskeletal health is demonstrated through global initiatives that are improving the lives of patients, advancing the skills of physicians, and establishing collaborations that serve as a conduit of best practices and outstanding outcomes the world over.

In May 2011, Dr. Scot Wolfe, Chief Emeritus of the Hand and Upper Extremity Service, delivered a podium presentation on a proposed universal instrument for the assessment of adult brachial plexus injuries at the XVII International Symposium on Brachial Plexus Surgery held in Lisbon, Portugal.

Dr. Oheneba Boachie-Adjei, Chief of the Scoliosis Service, officiated at the ribbon-cutting ceremony of the FOCOS Orthopaedic Hospital in Accra, Ghana, in 2012. Dr. Boachie, founder and President of the Foundation of Orthopedics and Complex Spine (FOCOS), led the development and creation of the 50-bed specialty hospital, which serves underserved adults and children in his native country, Ghana, and the sub-Saharan region.

Dr. Scott Bodie, Co-Chief of the Sports Medicine and Shoulder Service, delivers a keynote lecture on the future of orthopaedics at a celebration in Rio de Janeiro in honor of Hospital for Special Surgery’s International Learning and Training Center. The program on knee and shoulder replacement and current concepts in sports medicine for 16 physicians from Greece in April 2011, led by Dr. Douglas Padgett, Chief of the Adult Reconstruction and Joint Replacement Service, and Dr. Frank Cervos, associate attending orthopaedic surgeon, the seminar – funded by the Stavros Niarchos Foundation – included an observation in the OR and in the Hospital’s Bioskills Education Laboratory.

Istituto Ortopedico Rizzoli in Bologna, Italy, hosts the third meeting of the International Society of Orthopaedic Centers, founded by Dr. Thomas Scully, Surgeon-in-Chief, HSS, in 2005.

Institute for Orthopaedics in Bologna, Italy, hosts the third meeting of the International Society of Orthopaedic Centers, founded by Dr. Thomas Scully, Surgeon-in-Chief, HSS, in 2005.

Dr. Scott Bodie, Co-Chief of the Sports Medicine and Shoulder Service and Chair of the USA Swimming Sports Medicine Committee (left), and John Cavanaugh, PT, MEd, ATC, SCS, Clinical Supervisor at the HSS Sports Rehabilitation and Performance Center and an athletic trainer for the U.S. Olympic Open Water Swimming Team, serve as members of the U.S. Olympic medical staff for the 2012 Summer Olympic Games in London.

In its home base in New York City, the Department of Orthopaedic Surgery at Hospital for Special Surgery is extending its reach to the far corners of the world. The Department’s commitment to sharing its expertise in musculoskeletal health is demonstrated through global initiatives that are improving the lives of patients, advancing the skills of physicians, and establishing collaborations that serve as a conduit of best practices and outstanding outcomes the world over.

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Hospital for Special Surgery’s International Learning and Training Center conducted a five-day program on knee and shoulder replacement and current concepts in sports medicine for 36 physicians from Greece in April 2011. Led by Dr. Douglas Padgett, Chief of the Adult Reconstruction and Joint Replacement Service, and Dr. Frank Cervos, associate attending orthopaedic surgeon, the seminar – funded by the Stavros Niarchos Foundation – included an observation in the OR and in the Hospital’s Bioskills Education Laboratory.

About Hospital for Special Surgery

Founded in 1863, Hospital for Special Surgery (HSS) is a world leader in orthopaedics, rheumatology and rehabilitation. HSS is nationally ranked No. 1 in orthopaedics, No. 3 in rheumatology, No. 10 in neurology, and No. 5 in geriatrics by U.S. News & World Report (2012-13), and is the first hospital in New York State to receive Magnet Recognition for Excellence in Nursing Service from the American Nurses Credentialing Center three consecutive times. HSS has one of the lowest infection rates in the country. From 2007 to 2011, HSS has been a recipient of the HealthGrades Joint Replacement Excellence Award. HSS is a member of the NewYork-Presbyterian Healthcare System and an affiliate of Weill Cornell Medical College and as such all Hospital for Special Surgery medical staff are faculty of Weill Cornell. The hospital’s research division is internationally recognized as a leader in the investigation of musculoskeletal and autoimmune diseases.

Hospital for Special Surgery is located in New York City and online at www.hss.edu.

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A Message from the Surgeon-in-Chief
Making a World of Difference
Adult Reconstruction and Joint Replacement Division
Hip Service
Knee Service
Surgical Arthritis Service
Foot and Ankle Service
Hand and Upper Extremity Service
Limb Lengthening and Complex Reconstruction Service
Metabolic Bone Disease/Musculoskeletal Oncology Service
Orthopaedic Trauma Service
Pediatric Orthopaedic Service
Scoliosis Service
Spine Service
Sports Medicine and Shoulder Service
Department of Biomechanics
Professional Staff
Affiliations
Endowed Chairs, Professorships, and Fellowships
2011-2012 Notable Achievements
2011-2012 Selected Publications
Department of Orthopaedic Surgery – Contact Information

On the cover:
Hospital for Special Surgery makes its name in the international arena in many ways. (From the top) Dr. Oheneba Boachie-Adjei, Chief of the Scoliosis Service, with children served by the hospital he founded in Ghana; Dr. Thomas Sculco, Surgeon-in-Chief, at the 2011 Sixth International Congress of the Chinese Orthopaedic Association; and Dr. Scott Rodeo, Co-Chief of the Sports Medicine and Shoulder Service, and John Cavanaugh, PT, WHC-A, CSCS, Clinical Supervisor, HSS Sports Rehabilitation and Performance Center, at the 2012 Summer Olympic Games in London.