

Discovery to Recovery

CLINICAL AND RESEARCH HIGHLIGHTS AT HSS | SPRING 2009

HOSPITAL
FOR
SPECIAL
SURGERY



Improving Outcomes Through Patient Registries

With more than 200,000 patient visits each year, Hospital for Special Surgery is uniquely positioned to conduct clinical research that incorporates state-of-the-art patient care, while evaluating how best to apply the most recent innovations in orthopedics and rheumatology. Many healthcare institutions have incorporated randomized clinical trials into their clinical research programs, but few have developed the volume or breadth of patient registries currently being compiled by Special Surgery's researchers.



Through patient registries, HSS researchers are making key discoveries about orthopedic and rheumatologic conditions and treatments. Two of the largest registries are examining (a) pregnancy outcomes in lupus patients (above) and (b) how joint replacements (right) impact patients' lives over time.

Creating Registries

In creating a registry, clinicians collect various data from individual patients who are experiencing the same clinical problem, or have undergone a particular procedure, with the goal of capturing information that can be analyzed in the future. The registry is not designed to answer a specific question, but rather to capture all information about a certain population of patients. According to Robert N. Hotchkiss, MD, Director of Clinical Research, a registry creates a culture and means of detection, enabling clinicians to collect enough meaningful data from which conclusions can be reached. "Once we've seen a trend occurring in a certain population, we can take that group of patients and begin asking the question about whether they should get Treatment A or Treatment B," he says. "We look at the registry as part of the lifecycle of discovery, which helps us gain insight about a problem, treatment, or diagnosis, and out of that insight comes a more refined question that can be generated into a randomized controlled trial."

Dr. Hotchkiss says that few healthcare institutions have the infrastructure to collect and analyze such large amounts of data in a way that will produce valuable results. "Registries are very challenging – they are not simple, not cheap, and require people that have

expertise and understand the exact nature of the registry," he says. A registry involves a team that includes physicians, statisticians, methodologists, information technology professionals, and clinical coordinators. "At HSS, the administration, research staff, and medical staff all participate in order to make this work," he adds.

Making a PROMISSE

Aimed at identifying biomarkers that predict poor pregnancy outcomes in lupus patients, the PROMISSE (Predictors of pRegnancy Outcome: bioMarkers In antiphospholipid antibody Syndrome and Systemic lupus Erythematosus) study is a multicenter research initiative led by rheumatologist Jane Salmon, MD, co-director of HSS's Mary Kirkland Center for Lupus Research.

To date, 480 volunteers have enrolled in the study, which was initially funded in 2003 by the National Institute of Arthritis, Musculoskeletal and Skin Diseases of the National Institutes of Health. Every patient is seen by her physician and a study coordinator each month during her pregnancy, and clinical data and blood samples are obtained. Through the PROMISSE study, Dr. Salmon and her collaborators have worked to identify factors that can help a woman and her doctor plan for a healthy pregnancy and identify predictors of complica-



tions. Dr. Salmon presented two of the team's preliminary findings at the last meeting of the American College of Rheumatology and has led studies in experimental models that suggested new treatments to prevent pregnancy complications and provided the scientific rationale for PROMISSE.

Investigators found that women who conceived while their lupus disease was stable or only mildly active had relatively infrequent flares during their pregnancies and delivered healthy babies, when compared with women who conceived while experiencing a disease flare. The second

study showed that the presence of lupus anticoagulant, a specific subset of antiphospholipid autoantibodies, is highly associated with poor pregnancy outcomes. Women who tested positive for this protein were more likely to have complications such as miscarriage or preeclampsia during pregnancy. Doctors can use a blood test to determine if a patient falls into this category, and can closely monitor these women for early signs of pregnancy complications. "Based on our new data, we believe we are in a position to help doctors counsel

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Our Mission

A Reputation for Excellence

What makes Hospital for Special Surgery the premier musculoskeletal institution in the nation? There are so many different areas of the Hospital to credit. For the second year in a row HSS has been ranked number one in the nation in orthopedics in *U.S. News & World Report's* "America's Best Hospitals" issue. We have a robust research program where shared bench-to-bedside insights and experiences continue to lead to new discoveries and systems to diagnose, heal, and prevent disease. Our doctors are world-renowned for their skill and expertise, so much so that last year HSS received over 700 international inquiries, reflecting a 39% increase from 2007, and over 200 international patients had surgery at the Hospital, representing a 52% increase from 2007. And it's our reputation for competent and compassionate care that is the cornerstone of our commitment to service for both our patients and our community.

Individualized Care

Whatever brings a patient to HSS, our medical and professional staffs work tirelessly to ensure that all our patients have an outstanding experience while they're here. From our

award-winning nursing care to our recuperative pain management program, from the pre-operative patient education classes to the rehabilitation home exercise regimens, from the pastoral care to the medical and language interpreter services, HSS



Louis A. Shapiro

caregivers treat each and every patient, and their family members, as unique individuals with unique needs. A striking example of the individualized care we provide can be seen in the Prosthetics and Orthotics Department (story featured on page 6) which provides prostheses and orthoses for children and adults. Thanks to the generous support of Ellen and Joe Wright, a fund has been established to help provide financial assistance to families who need a prosthetic or orthotic device.

Elevating Quality

Among the reasons for HSS's outstanding reputation is the level of quality care our physicians and staff provide to each and every patient. As an organization, we are focusing on a very important strategic initiative which we refer to as "Elevating Quality." As the leader in our field of musculoskeletal health care, it is our goal to set the benchmarks rather than just work towards measures set

by others. Our Hospital Quality Council, consisting of medical staff leadership, Board members and management staff, is charged with the responsibility of raising the bar on our already excellent track record of performance in the area of quality care. We have developed and are continuing to develop metrics for clinical outcomes and patient satisfaction that will help drive performance measures at all levels of the Hospital. Our best practices in infection control make us a leader in the nation with what is likely to be the lowest infection rate for orthopedics in the world. Yet we are still working tirelessly to reduce our infection rate even more and will not rest until there are zero preventable infections.

The Hospital uses Press Ganey Associates, Inc., the industry leader in patient satisfaction assessments, to measure satisfaction across the continuum of care (Inpatient, Ambulatory Surgery, Rehabilitation, and Physician Offices). In the most recent reporting period (Q4, 2008), HSS ranked in the 99th percentile (from a database of more than 1,000 hospitals) for inpatients' likelihood to recommend the Hospital to others. This question is considered by many experts to be the most important measure of patient loyalty. According to Press Ganey, less than 2% of hospitals are able to achieve and

maintain improvement in customer satisfaction for three consecutive years. HSS has maintained its status as the benchmark for this question for at least four consecutive years. This is a great testament to Special Surgery, but we still want to do better and so we are actively identifying best practices in the field through research, and by seeking staff input that will help us provide the best and safest care for our patients.

Always Challenging Ourselves

A philosopher once said "Leadership begins with challenging oneself." This sentiment is evident throughout HSS. We perform extremely well, however one sign of a great organization is never resting and never ever settling. HSS has been top ranked in the nation in orthopedics and rheumatology for 18 consecutive years. This annual accolade is a result of constantly and consistently challenging ourselves to improve the services we offer.

Thank you for your past and ongoing support. Our continued growth and development as the premier musculoskeletal hospital in the world is dependent on the support of our friends who are passionate about our great hospital.

Louis A. Shapiro
President & Chief Executive Officer

In the News

Exploring New Options for Arthritis Sufferers

Osteoarthritis, characterized by a loss or erosion of articular cartilage, currently affects more than 45 million Americans. The arthritic process typically starts with damage to the cartilage surface, and can appear as a small hole or defect. As that damage expands, the chances of proper healing diminish, as cartilage cannot naturally re-grow. "A small hole is going to turn into a big hole eventually, given enough time," says orthopedic surgeon Riley Williams, MD, Director of the Institute for Cartilage Repair at HSS. A multi-center clinical trial led by Dr. Williams, featured on *NBC Nightly News with Brian Williams*, is focused on investigating a new minimally invasive alternative for cartilage repair in the knee.

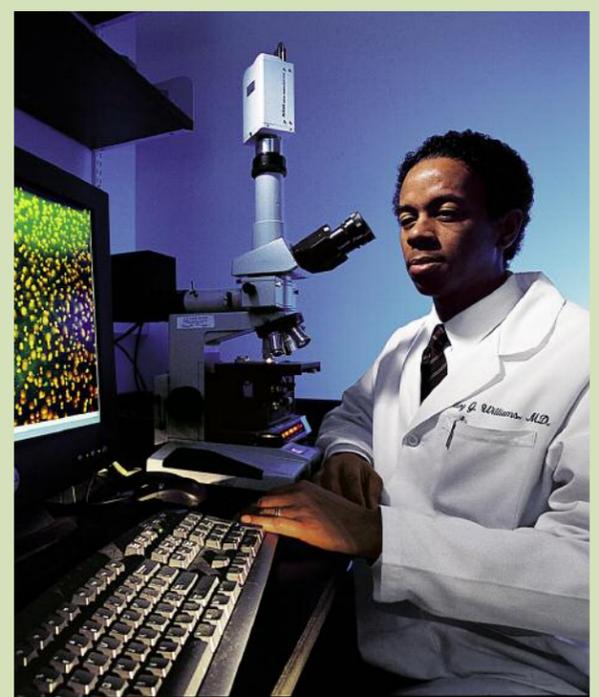
After an initial injury has caused damage to a specific area of the cartilage, there are few options that can repair the damage, which is likely to lead to osteoarthritis. The most popular current treatment for such cartilage damage is the microfracture procedure. In this surgery, a tiny 'pick' spikes holes into the base of the damaged area of the bone to promote bleeding. This allows the patient's bone marrow cells to come to the surface of the damaged tissue. As a result, the cells change into fibrocartilage cells and heal the defect. Microfracture is minimally invasive

and very quick; however, research has found that the defect may not always be fully repaired. The fibrocartilage does not hold up as well under everyday wear and tear as normal cartilage and has a much higher risk of breaking down again. As a result, surgeons continue to pursue new methods of repairing cartilage in the knee.

Dr. Williams' team is investigating a new method for filling a hole in the cartilage, using a patient's own cells. A small piece of the patient's healthy cartilage is removed and broken into individual cells, which are grown in a laboratory and put into a piece of protein matrix. Using the matrix as a scaffold, the cells begin to grow over and around it. This creates a piece of new cartilage which is then, through a tiny incision, implanted into the patient's joint over the damaged area, much like a living patch.

"This operation is much shorter than previous similar procedures and is made through a very limited incision with much less pain," says Dr. Williams. "You're able to go in and, if not stop the arthritis, certainly delay its progress."

The trial is being held at six investigational sites around the United States and will test up to 30 patients between the ages of 18 and 55 to compare, on a randomized basis, the new technology with the microfracture treatment.



Riley Williams, MD, is the Director of the Institute for Cartilage Repair at Hospital for Special Surgery.

The data will be used to evaluate the safety and efficacy of the implant, identify appropriate patient populations, and help inform future clinical trial design. ●

To learn more about the trial, please visit hss.edu/d2r

Innovative Treatments Aimed at Improving Lives

Two studies currently being conducted at Hospital for Special Surgery by rheumatologists Doruk Erkan, MD, and Michael D. Lockshin, MD, may enable researchers to identify new treatments for patients with Antiphospholipid Syndrome (APS) or antiphospholipid antibodies (aPL).

Living with APS

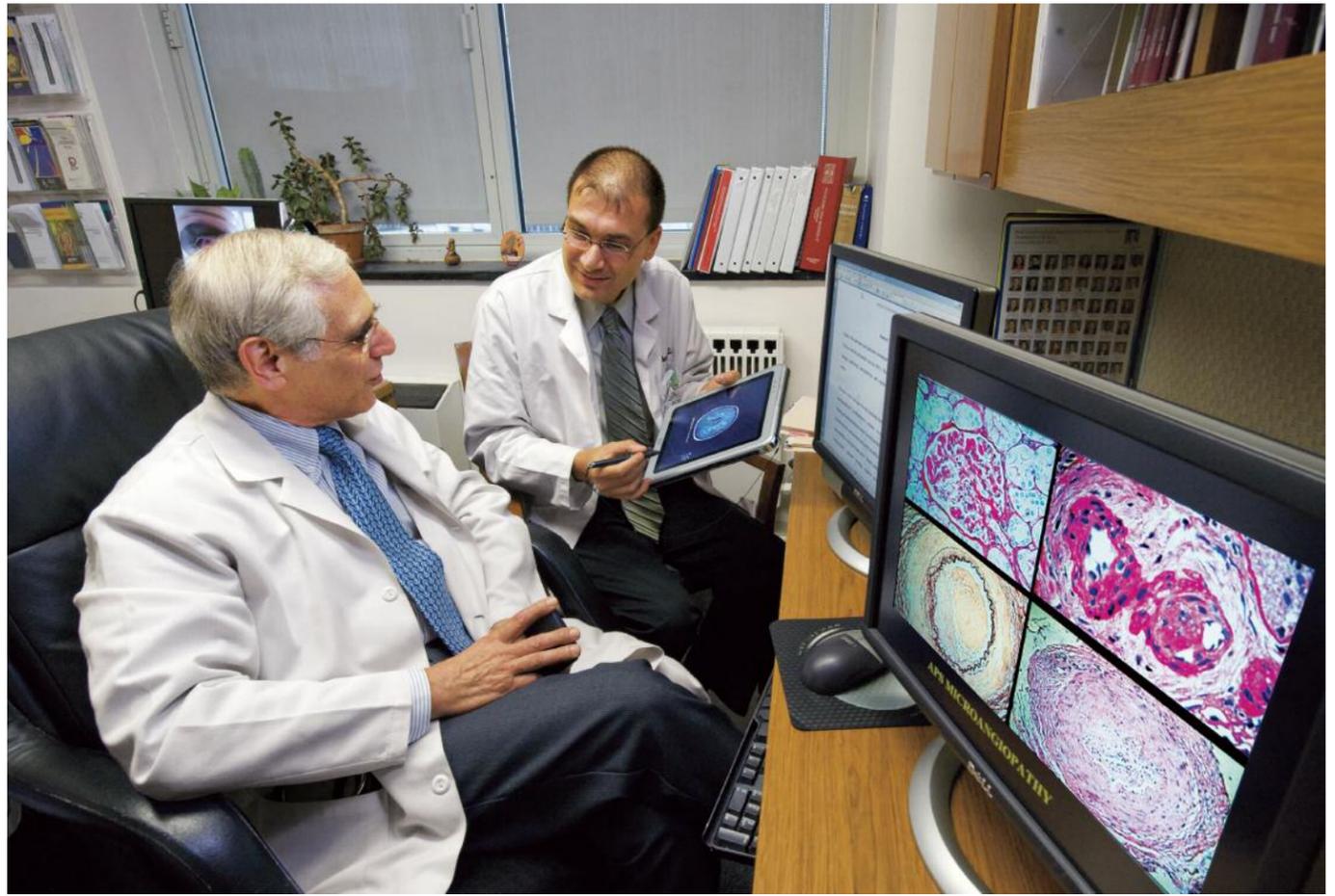
APS is an autoimmune disorder in which the patient's body produces antiphospholipid antibodies, which can cause the blood to clot or become "thickened." These antibodies can result in a variety of symptoms related to clotting, including pregnancy losses and deep vein thrombosis.

APS is divided into two categories: APS occurring in the absence of any other related diseases, and APS occurring in conjunction with a rheumatic disease, such as lupus or rheumatoid arthritis. While some patients with antiphospholipid antibodies may be predisposed to clots, others can have the antibodies in their blood without clots being formed. These patients do not have APS, but are called antiphospholipid antibody positive (aPL positive).

Blood clots in patients with APS occur when an antibody attaches to an endothelial cell on the vessel wall, triggering reactions that result in clotting. Currently, APS patients with blood clots are given an anticoagulant, or blood thinner, to prevent this from occurring. Blood thinners, such as warfarin, make the vascular wall less "sticky," with the goal of preventing the antibody from attaching itself there. Therefore, while blood thinners reduce the risk of the antibody attaching to the arterial or venous wall, they do not reduce or change the nature of the potentially harmful antibodies. The use of blood thinners also increases the patient's risk of bleeding.

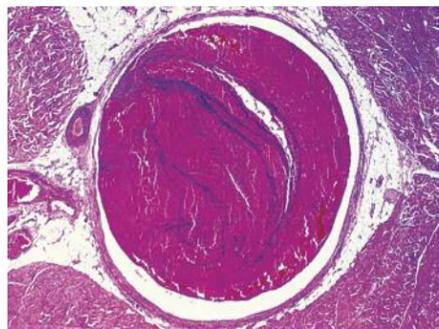
Reducing the Risk of Blood Clots

A clinical trial being conducted by Drs. Erkan and Lockshin, of Hospital for Special Surgery's Barbara Volcker Center for Women and Rheumatic Diseases, will investigate whether a drug traditionally used to lower cholesterol is beneficial and safe in reducing the risk of cardiovascular disease and blood clots in patients with APS or those who are aPL positive. The study, being conducted in conjunction with the



Michael Lockshin, MD (left), and Doruk Erkan, MD, of HSS's Barbara Volcker Center for Women and Rheumatic Diseases, are exploring new ways to help patients suffering from Antiphospholipid Syndrome.

University of Texas Medical Branch Rheumatology Clinic, seeks to determine the effects of statin drugs on patients with APS. Statins, most commonly used to lower cholesterol, also have anti-inflammatory and anti-thrombotic effects, which would lend themselves to the prevention of blood clots in patients with APS. The clinical study is based on basic research conducted at the University



The presence of antiphospholipid antibodies in patients with APS and those who are aPL positive can increase the risk of developing a thrombosis (blood clot) in a vein or artery, as seen above. Without treatment, patients often experience repeated clots which can disturb blood flow to important organs, impairing their ability to function.

of Texas at Galveston by Dr. Silvia Pierangeli. Her research has shown that in mice, the introduction of statins can decrease the inflammatory markers that are induced by antiphospholipid antibodies. Whereas blood thinners focus on the prevention of thrombosis in aPL positive patients, the statins have the potential to modify the immune response itself and decrease both the vascular wall signals as well as inflammation proteins/cells that are involved in blood clot formation. An immunomodulatory approach with a statin for the treatment of APS could

result not only in preventing symptoms, but would be ideal particularly for patients who experience complications with blood thinners, as well as those who get blood clots despite the blood thinners.

Dr. Erkan, who is the Associate Physician-Scientist at the Barbara Volcker Center, is the lead site investigator for the study at HSS, where 30 patients will participate in the clinical trial. He and Dr. Lockshin, who is the Director of the Barbara Volcker Center, are recruiting four classes of patients for this study: patients with lupus and APS, patients with APS alone, patients with lupus who are aPL positive, and patients who are aPL positive but do not have lupus. Participants will take fluvastatin, which is a particular statin, daily for three months and their blood will be monitored once a month. After three months, the medication will be discontinued, but patients will continue to have their blood monitored for three more months. This study is designed to allow researchers to observe the effects that the medication has on the antibodies. "After three months of therapy, our goal is to show that the inflammatory markers go down," says Dr. Erkan. "And after three more months, our goal is to determine if a direct causal relationship exists between the drug and the markers."

Rituximab in Antiphospholipid Syndrome

While some aPL positive patients may not exhibit any symptoms, others may experience clinical problems that are resistant to anticoagulants. These clinical manifestations include

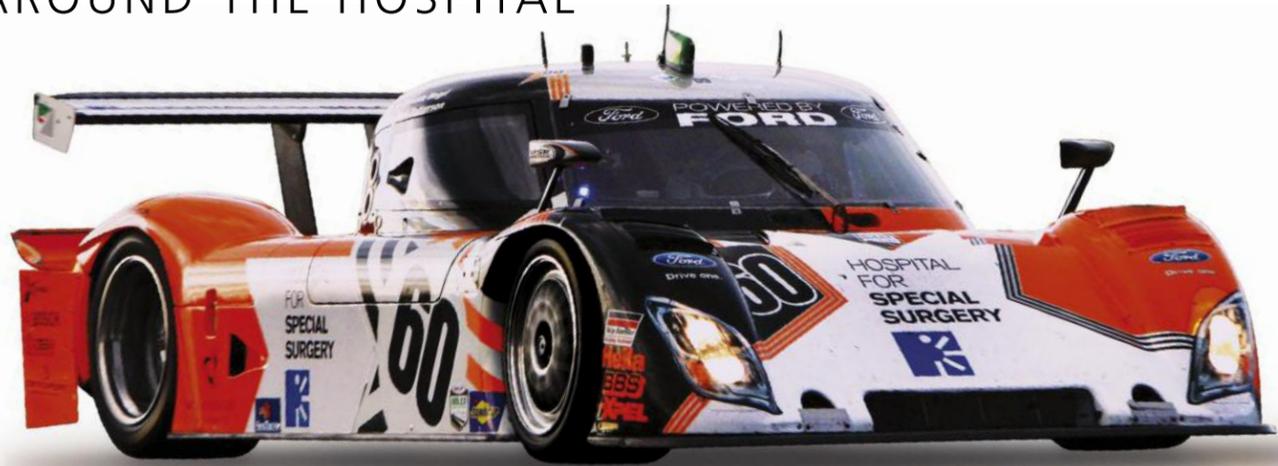
low platelet count, anemia, heart valve disease, skin ulcers, kidney small vessel clots, and memory problems. Drs. Erkan and Lockshin are also currently conducting a pilot study to evaluate whether an infusion drug called rituximab, approved for treatment of non-Hodgkin's B-cell lymphoma and for certain patients with rheumatoid arthritis, will reduce the signs and symptoms of these aPL-related clinical problems. "In the simplest terms, rituximab inhibits B-cells, and B-cells are the cells that create autoantibodies," says Dr. Erkan. "The idea is that if we can inhibit B cells, we can decrease the antibodies." The 20 patients participating in the study will receive two intravenous doses of rituximab, and will be followed for six months for serial aPL monitoring as well as clinical outcomes. "Current treatments available for this syndrome are neither simple nor satisfactory," says Dr. Lockshin. "We hope to define new principles of treatment that will improve the lives of our patients."

The Barbara Volcker Center is the first of its kind in the United States, bringing together scientists, rheumatologists, orthopedists, endocrinologists, and obstetrician/gynecologists under one umbrella. This multidisciplinary approach enables women with conditions such as APS and lupus to get the best medical care by a team of appropriate advisors. ●

To learn more, please visit www.hss.edu/barbara-volcker

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HAPPENINGS AROUND THE HOSPITAL



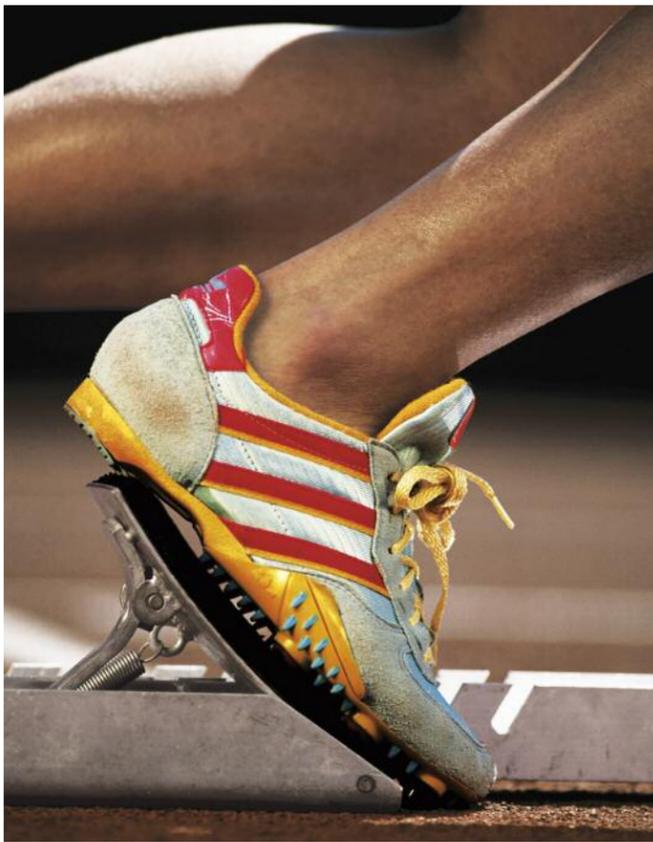
When Words Are Not Enough ^

The gratitude that a person feels when his mobility has been restored often cannot be put into words, prompting some creative HSS patients to find new ways to say thank you. Race car driver Mark Patterson had been hit by a car while riding his bike, resulting in nerve damage. The treatment that he received at Special Surgery under the care of physiatrist Joseph Feinberg, MD, allowed him to compete again just weeks later. Mr. Patterson exhibited his appreciation by requesting permission to display the HSS logo on his car (above). Dr. Scott Clark had a similar idea about how to express his gratitude to HSS. When degenerative hip pain threatened to keep him from his favorite activities – mountain



climbing and scuba diving – he came to Special Surgery to see orthopedic surgeon Edwin P. Su, MD. Dr. Clark was so happy with the results of his hip resurfacing procedure that he now takes the HSS banner with him on his adventures, thanking Dr. Su from all corners of the world (right).

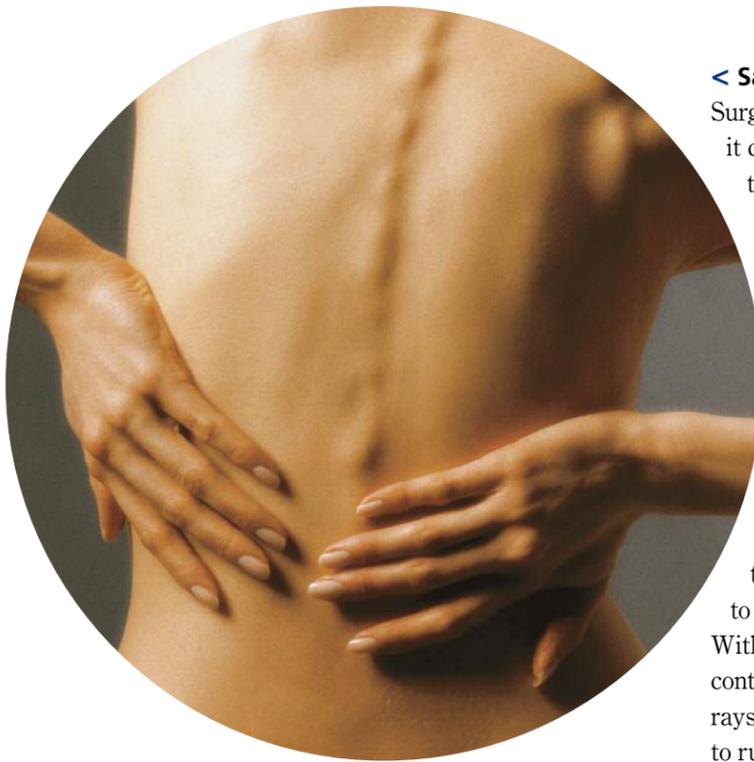
More online www.hss.edu/d2r



Just a Sprain? ^

Many people may believe that ankle sprains – in both children and adults – are always minor injuries. But HSS orthopedic surgeon John G. Kennedy, MD, warns that ignoring the pain can result in arthritis, cartilage damage, bone damage, or cysts down the line, and emphasizes the importance of being able to distinguish between a common sprain and one that may be more serious. “Most sprains just need two days of ice and rest,” says Dr. Kennedy. “If they still have pain a week later, they should go to the doctor.” Dr. Kennedy shared his expertise on properly diagnosing ankle sprains in an interview on ReachMD, a national radio channel for medical professionals, available on XM radio and online.

To hear the interview, visit www.hss.edu/d2r



< Say Bye-Bye to Back Pain

Surgery may be a thing of the past when it comes to certain spinal cysts, thanks to groundbreaking research by a team of investigators led by Gregory E. Lutz, MD, Chief of the Physiatry Department at HSS. The study, published in *The Spine Journal*, sought to find an alternative to surgery for people with lumbar Zygapophyseal joint (Z-joint) cysts, a feat that experienced only limited success in previous studies. In the past, these cysts were surgically removed to relieve pressure on the spinal nerve. With the new, less invasive procedure, a contrast agent (dye that is visible on X-rays) is injected into the cyst, causing it to rupture, thus alleviating lower back and leg pain. Using a contrast agent enables doctors to monitor the procedure via X-ray to ensure the cyst has ruptured. In Dr. Lutz's study, 72 percent of patients who underwent the procedure achieved excellent long-term pain relief.

DUALSEE

The New Face of HSS.edu >

Special Surgery launched a redesigned HSS.edu late in 2008. The new site, offering a fresh look and easier navigation for patients, comes at a time when HSS.edu has seen an immense growth in online traffic. The redesign not only gives the site a clean, modern look, but also introduces a number of features designed to increase the focus on patients. One such feature is a patient timeline that helps demonstrate how HSS can provide care through any or all of four main stages: Diagnosis, Treatment, Rehabilitation, and Wellness. Other new features include physician biographies that are linked to relevant conditions and a search function that allows the visitor to search articles by body part.



< HSS on iTunes

Learning more about musculoskeletal conditions, whether you're a patient or a professional, just got easier. Hospital for Special Surgery now offers audio and video podcasts – free of charge – either on HSS.edu or iTunes.

Once downloaded, these segments can be listened to or viewed directly from your computer or MP3 player. Video podcasts provide a firsthand look at various surgical procedures, exam techniques, patient testimonials, and presentations about managing specific musculoskeletal conditions. At left, Scott Wolfe, MD, demonstrates how to perform a neurologic examination of the upper extremity. Audio podcasts feature HSS professionals discussing a variety of subjects, including what patients can expect when seeking treatment for certain injuries or conditions.

Podcasts are available at <http://www.hss.edu/podcasts.asp> or from the iTunes store.

Helping to Ease Growing Pains

\$3 Million Gift Advances Pediatric Care

HSS Board member Ellen Wright, the founder of an interior design firm and the author of several books on cooking and entertaining, was heartbroken when she learned about an obstacle HSS's Prosthetics and Orthotics (P&O) Department was facing. The P&O Department provides children and adults with a wide range of prostheses, such as arms and legs for patients who have lost a limb, and orthoses, such as custom braces or shoes, primarily designed for patients with congenital disorders. Mrs. Wright was in the P&O Department several years ago and overheard a conversation between one of the staff members and a teenage patient with rheumatoid arthritis. "They were talking about how the boy needed a new pair of shoes, but he would not be able to get them for six more months, because insurance would not cover them until then," she says. "And I thought to myself, 'That's impossible – he's a growing boy!'"

According to Glenn Garrison, Director of Hospital for Special Surgery's P&O Department, health-care institutions across the country are struggling to provide proper prosthetic and orthotic care when insurance companies will not cover basic necessities, or will only provide coverage on a fixed schedule. Indeed,

a recent article in *The Wall Street Journal* reports that many private health plans cap prosthesis coverage at a few thousand dollars each year or – worse – pay for just one device per limb in a lifetime, sometimes even for a growing child. "Most individuals have insurance coverage for some level of prosthetic and orthotic care," says Mr. Garrison. "Unfortunately, we deal with many individuals – especially children – who are either underinsured or uninsured as it relates to the needs that they have in this area." JeMe Cioppa-Mosca, PT, Assistant Vice President of Rehabilitation at Special Surgery, adds that HSS's physicians and P&O staff members currently do everything in their power to help patients cope with these gaps in coverage. "We try to match somebody's clinical needs and what would really benefit their quality of life, with their financial ability and their insurance," she says. "The clinicians partner with the individual and the family to provide the appropriate device and our incredibly skilled P&O staff can often adapt devices to create the optimal brace for any patient."

Still, Mrs. Wright felt that more could be done to help these patients. When she joined Special Surgery's Board of Trustees last year, she thought once again of the teenage boy



A gift from Ellen Wright and her husband, Joe, will help pediatric patients get the prosthetic or orthotic devices they need.

with rheumatoid arthritis that she had encountered years ago. She and her husband, Joe, made a donation to the P&O Department – the first gift the department had ever received – to establish a fund to help pediatric patients get the prosthetic or orthotic devices they need. "This department doesn't need a different location or a fancy new office," says Mrs. Wright. "What it does need is an ongoing fund that will hopefully grow and become an endowment fund, and will be there in perpetuity to help pediatric patients get a limb, or a pair of shoes, or a brace – whatever they need – right away. If insurance doesn't cover it, this fund will." Part of their contribution was also allocated to support arthritis research being conducted at Special Surgery, with the goal of

developing effective approaches for prevention and treatment of musculoskeletal disorders. In their ongoing mission to care for Special Surgery's youngest patients, Mr. and Mrs. Wright are also supporting the new Children's Pavilion at HSS, which will provide pediatric patients and their families with unparalleled health care in an environment specifically designed for children. This recent gift brings the Wrights' total support of the Hospital to over \$3 million.

"We are so grateful to Ellen and Joe Wright for providing this critically important support," says Ms. Cioppa-Mosca. "Their commitment will enable us to continue to enhance the quality of life for the thousands of children that come through the Hospital's doors each year." ●

Celebrating Service to the Community

This year marks a historic milestone for LupusLine®, one of HSS's long-running outreach programs, as it celebrates 20 years of service to countless members of the HSS community. Founded in late 1988, LupusLine remains the only telephone peer support program offering one-on-one emotional support and education to people with lupus. This highly successful program, supervised by Jillian Rose, LMSW, matches callers to trained volunteers who discuss experiences related to the impact of lupus, such as cultural, family, and financial dynamics, with the goal of helping callers enhance their coping skills and reduce feelings of isolation. "The program cuts across cultures, eradicates fear, isolation and confusion about this illness," says Rose. "Although lupus can be a devastating illness, I have been fortunate to hear the stories of hope, witness the acts of courage, and help to foster



For twenty years, LupusLine has been the only telephone peer support program for people with lupus. The program's founder, Roberta Horton, right, was honored at the annual meeting of the American College of Rheumatology.

strength." When asked to describe her experience with the peer health educators, a patient said, "We laughed at things that nobody else would ever understand because we had similar experiences. These people were sources of great strength to me. I would say the secret handshake of illness brought me a long way and taught me how to laugh."

To date, the program, which is made possible through funding by Rheuminations, Inc., has had more than 17,000 client contacts.

The program's founder, Roberta Horton, LCSW, ACSW, HSS Director of the Department of Social Work Programs, has even more to celebrate. At the most recent American College of Rheumatology Scientific Meeting, Horton received the Association of Rheumatology Health Professionals' Addie Thomas Service Award, an honor awarded to active volunteers involved with local, regional, and national arthritis-related activities. Horton was cited for many contributions during her 30-year tenure at HSS, including innovative program development and encouragement of her staff's ongoing professional development.



Roberta Horton, Director of the Department of Social Work Programs

Stephen Paget, MD, Physician-in-Chief, wrote in his nomination letter, "Under her leadership, more innovative social work support and educa-

tional programs are offered at Hospital for Special Surgery than anywhere else in the United States. She saw a need, understood the broad emotional and physical impact of chronic autoimmune disorders upon the patients who live with them, and developed, shepherded, and then refined nine rheumatology social work programs...Roberta symbolizes the very best of the social work profession because to conceive of such groups demands a deep appreciation of and sensitivity to the fears, needs and daily realities of having a chronic illness that, at any moment, may shorten or profoundly alter one's life."

Horton's innovative programming also includes additional assistance to the lupus community through Charla de Lupus (Lupus Chat)®, which provides individual and group support to Spanish-speaking teens and adults either in-person at area hospitals or via telephone, and LANtern® (Lupus Asian Network), which offers bilingual telephone support and education for Asian-Americans, specifically the Chinese community. ●

To learn more, please visit www.hss.edu/lupus-programs.asp

Breaking Barriers: ‘Sound’ Technology for Developing Countries

When it comes to imaging technology, new research shows that portable ultrasound machines may be the most cost-effective option for improving medical care in developing nations. The study, led by radiologist Ronald Adler, MD, PhD,



Ronald Adler, MD, PhD, uses a portable ultrasound machine to treat patients at a clinic in Sekondi, Ghana.

Chief of Special Surgery’s Division of Ultrasound and Body CT, explored ultrasound use in primary care and hospital settings at the Ghana Health Mission Clinic in West Africa. Jacqueline K. Spencer, MD, of the VA Boston Healthcare System, was a co-investigator in the study.

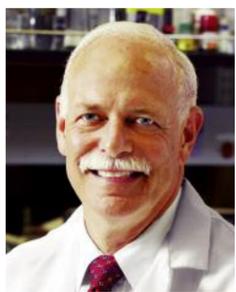
Published in the *Journal of Ultrasound in Medicine*, the study aimed to evaluate the compact tech-

nology’s functionality and clinical usefulness in a variety of conditions across multiple clinical scenarios. Of the 67 ultrasounds performed during the study’s duration, 81 percent were considered to add to the clinical diagnosis and 40 percent influenced the outcome of the patient’s medical care, pointing to the machine’s versatility in a range of applications. A portable ultrasound machine’s \$50,000 to \$80,000 price tag also makes it relatively inexpensive compared with full-sized CT scanners and MRI units, which can cost several million dollars.

According to Dr. Adler, it was apparent that the small, portable ultrasound units could play an extremely valuable role in developing countries. The challenges to effectively instituting this technology include: ensuring appropriate referral of patients who will benefit from such imaging, adequately training medical personnel to operate the equipment and interpret the images, and exploring collaborative efforts with outside organizations or institutions that can assist with these training needs and financial requirements. ●

Dr. Steven Goldring Receives Coveted Grant for RA Research

HSS Chief Scientific Officer Steven R. Goldring, MD, is one of only 15 scientists in the United States chosen to participate in a cutting-edge research program focused on finding a cure



Steven R. Goldring, MD

for rheumatoid arthritis, a disease that currently affects 1.3 million Americans. Established by the American College of Rheumatology Research and Education Foundation (ACR-REF), the program, entitled, “Within Our Reach: Finding a Cure for Rheumatoid Arthritis,” awarded participating researchers \$6 million in grants to accelerate current studies. Now in its second year, “Within Our Reach” supports the ACR-REF’s belief that, with appropriate funding, prevention, treatment and a cure are all within the scope of current scientific research. Dr. Goldring is the only New York-based rheumatologist who received a grant.

Dr. Goldring’s long-standing research and clinical interest in under-

standing the mechanisms of joint destruction in rheumatoid arthritis led to the selection of his research proposal for the program’s Innovative Basic Research category, which recognizes novel research that is expected to change the future of rheumatoid arthritis. Dr. Goldring’s research focuses on a specific cell called the osteoclast, primarily found on bone surfaces and within joints. He works closely with Ed Purdue, PhD, who heads the Osteolysis Laboratory at Special Surgery, and with colleagues at Harvard Medical School.

In people with rheumatoid arthritis, osteoclasts – which usually clear away damaged bone and promote new bone growth – begin to destroy the healthy bone around joints. Little is known about the causes of this role reversal, and treatment options are currently limited. In an effort to discover novel therapeutic targets to prevent joint destruction, Dr. Goldring’s research aims to determine the genes and signals that activate the osteoclasts to destroy bone. If successful, Dr. Goldring’s findings could help to prevent irreversible joint damage and disability in patients with rheumatoid arthritis. ●

OREF Award Helps Fund Bone Research

As the 2008 recipient of the Orthopaedic Research and Education Foundation (OREF) Career Development Award, HSS orthopedic surgeon Mathias P.G. Bostrom, MD, will receive \$225,000 over the next three years to support his research, which seeks to improve scientists’ understanding of bone healing.



Mathias Bostrom, MD, received OREF’s Career Development Award, given to one U.S. physician each year.

Given to one U.S. physician each year whose research has the potential to change the future of orthopedic surgery, the funding will support Dr. Bostrom’s research on enhancing cancellous (porous) bone formation. Compromised cancellous bone can limit a doctor’s ability to secure an implant, and often results in fractures that can heal in suboptimal positions, requiring revision surgeries and longer recovery times. “While great advances have been made in improving implants and fixation methods used in total joint arthroplasty, little attention has been paid

to understanding or enhancing the cancellous bone tissue with which they interact,” Dr. Bostrom says.

New Treatments on the Horizon

Dr. Bostrom’s current work focuses on combining intermittent parathyroid hormone (PTH) administration and weight-bearing exercise, simulated by applying a compressive load to bone, to increase new bone formation. Although both techniques are known to stimulate bone formation alone, it is unknown if PTH builds new bone in the presence of mechanical loading. “I believe PTH and

load-bearing work synergistically and therefore will have a greater effect than either alone,” Dr. Bostrom says. “If we find, for example, that using PTH and a loading protocol significantly advances the amount of bone, our approach to managing osteoporotic hip [fractures] may

be radically different. Instead of doing surgery right away, it may mean we give the patient PTH or some other agent.”

According to Dr. Bostrom, the OREF Career Development Award will help him answer questions about how bone interacts with its environment, and may help patients recover more quickly from fracture repairs or total joint replacements.

“Ultimately, this knowledge should help us improve bone quality and thus improve the health, activity, and quality of life of our patients,” he says. ●

Chair Honors Physician’s Memory

With more than \$2 million raised, Hospital for Special Surgery’s Richard S. Laskin, MD Chair in Musculoskeletal Education is now fully endowed. The Chair honors the memory of Dr. Laskin, a valued member of the HSS staff for 17 years who passed away early in 2008. During his tenure at Special Surgery, Dr. Laskin served as Chief of the Division of Arthroplasty and founding Editor-in-Chief of the *HSS Journal*, a peer-reviewed journal that was launched in 2005 to disseminate pacesetter bone and joint research studies, clinical pathways, and state-of-the-art techniques to the broader musculoskeletal community.

The Chair supports two areas with which Dr. Laskin was intimately involved: the Arthroplasty

Division Total Joint Registry (see cover story) and the *HSS Journal*. Orthopedic surgeon Charles N. Cornell, MD, HSS’s Clinical Director of Orthopedic Surgery, has been chosen to serve as the new Editor-in-Chief of the *Journal*, which was recently accepted into Pub Med Central (PMC), a digital archive of biomedical and life sciences journals maintained by the National Institutes of Health. “The Laskin Chair will not only support the registry and the *HSS Journal*, but will serve as a lasting tribute to Dr. Laskin,” says Thomas P. Sculco, MD, Surgeon-in-Chief. “A giant among men, Dick was a skilled and compassionate surgeon who cared about his patients and committed his life to improving knee-replacement surgery.” ●

Recognition from Around the World

Kudos

Carl Blobel, MD, was an invited lecturer at the annual meeting of the American College of Rheumatology (ACR) in San Francisco, CA and at the Cancer Degradome Symposium in London, UK.

Richard Bockman, MD, PhD, was appointed to the American Society for Bone and Mineral Research Professional Practice Committee through 2011.

Amanda Carmel, MD, a physician mentoring with Dr. Bockman, has received a Mary and David Hoar Fellowship in the Prevention and Treatment of Hip Fracture to investigate if Vitamin D status is associated with a patient's clinical response to bisphosphonate. Dr. Bockman is named co-investigator.

Adele Boskey, PhD, was elected a Fellow of the American Institute for Medical and Biomedical Engineering, and also a member of the Cornell University Nanobiotechnology Center. Dr. Boskey was also reappointed to serve as the Orthopaedic Research and Education Foundation's (OREF) Liaison to the Research Development Committee of the American Academy of Orthopaedic Surgeons (AAOS).

Peggy Crow, MD, was the Medical Grand Rounds Speaker, as well as Visiting Professor, at Emory University School of Medicine. Dr. Crow also presented a featured lecture at the annual meeting of the ACR, a plenary lecture at a meeting of the International Cytokine Society in Montreal, Canada, and an invited lecturer at the annual meeting of the Oligonucleotide Therapeutics Society in Boston, MA. She also served as a study section member for the Autoimmunity Centers of Excellence of the National Institute of Allergy and Infectious Diseases.

Doruk Erkan, MD, received the Rudd-Gardy Teaching Excellence Award, given by HSS's Division of Rheumatology.

Continued from page 1

and care for their patients," says Dr. Salmon. "Our findings from the PROMISSE study show that women with lupus can have normal pregnancies when they work together with their doctors, beginning with the decision of when it is safe to conceive and continuing with close follow-up to anticipate potential problems."

The NIH recently extended the study's funding for an additional five years, beginning with \$1.4 million for the first year of renewal. The continued support will allow Dr. Salmon and her co-investigators from 11 academic centers to increase the number of volunteers to 700 and to expand the study to examine a broader range of genes and molecular pathways that can affect pregnancy in patients with lupus, and potentially, cause miscarriage and preeclampsia in healthy women.

Total Joint Replacement Outcomes

Of over 25 registries currently being compiled at Special Surgery, the hospital-wide Arthroplasty Registry

Steven Goldring, MD, was the Plenary Speaker at the European Society of Clinical Investigation in Geneva, Switzerland. He was also a program organizer, speaker, and session chair at the Segal North American Workshop on Osteoarthritis, and a co-organizer of the ACR Rheumatology Fellows Research Workshop, both held in Chicago, IL. Dr. Goldring also served as a member of the Organizing Committee for the 2nd International Conference on Osteoimmunology in Rhodes, Greece.

Jo Hannafin, MD, PhD, was the 2009 recipient of the Orthopaedic Research Society's (ORS) Women's Leadership Forum Award. She was also the Invited Visiting Professor in the Department of Orthopedic Surgery at the Cleveland Clinic and was appointed Vice Chair for Development for OREF. Dr. Hannafin also gave the James Garrick lecture at the University of Washington and served on a Skeletal Biology Structure and Regeneration Study Section

Chisa Hidaka, MD, was an invited speaker at the Gene Therapy in Arthritis and Related Diseases conference in Seattle, WA, was named to the ORS Nominating Committee, and served as a grant reviewer for the Arthritis Foundation.

Robert Hotchkiss, MD, was the Mathilda & Terence Kennedy Visiting Professor and a guest of the Kennedy Institute of Rheumatology, both at Imperial College of London.

Joseph Lane, MD, was appointed to a four year term on a Study Section for the NIH/National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS).

Michael Lockshin, MD, was an invited speaker at the EuroLupus Project meeting and served on the Advisory Committee for the 7th European Lupus Congress, both held in Amsterdam. He was also an invited speaker at the European League Against Rheumatism (EULAR) meeting in Paris.

is the largest. A comprehensive database that records and tracks detailed information about the thousands of joint replacement surgeries that take place at Special Surgery each year, the Arthroplasty Registry will ultimately be one of the largest joint replacement registries in the world. In addition to storing information about peri-operative health status, implant types, and patient demographics, the registry tracks a variety of clinical outcome measurements over time, including pain and activity level. By following the functioning of joint replacement patients over long periods, HSS surgeons hope to determine which surgical practices and implant models are most effective.

The Arthroplasty Registry is a collaboration with Weill Cornell Medical College, with which Special Surgery has established a Center for Education and Research on Therapeutics (CERT) to study total joint replacements. Funded by a large scale, multi-year grant from the Agency for Healthcare Research and

Robert G. Marx, MD, published an invited editorial in the *New England Journal of Medicine* entitled "Arthroscopic Surgery for Osteoarthritis of the Knee?" In addition, he was a Visiting Professor at the Mayo Clinic and presented Orthopedic Grand Rounds, as well as Sports Medicine Grand Rounds. He also presented an invited lecture on shoulder stabilization surgery at the European Society for Sports Medicine, Knee Surgery and Arthroscopy held in Porto, Portugal.

Hollis Potter, MD, serves as a consultant on the FDA's Orthopaedic and Rehabilitation Devices Panel and is a member of the NIH Skeletal Biology Development and Disease Study Section and the NIH/NIAMS Musculoskeletal Disease Research Core Centers Study Section.

Scott Rodeo, MD, served on an NIH Special Emphasis Panel on Musculoskeletal Tissue Engineering.

Inez Rogatsky, PhD, served as a Study Section Member for the Lupus Research Institute and was invited to serve on an NIH/National Institute of Diabetes and Digestive and Kidney Diseases Ad Hoc Grant Review Committee.

Jane Salmon, MD, was selected for membership in the Association of American Physicians and the EULAR Scientific Program Committee. Dr. Salmon also presented a research lecture for the 30th year reunion class at Columbia University College of Physicians and Surgeons and spoke at the 7th European Lupus Congress in Amsterdam. She was also invited to participate in the NIAMS Roundtable on Arthritis and Rheumatic Diseases.

Marjana Tomic, PhD, served as a member of the NIH/NIAMS Study Section reviewing Skin Diseases Research Core Centers, and as an ad hoc reviewer for the NIH Arthritis, Connective Tissue and Skin review Study Section.

Quality, the CERT is dedicated to addressing questions regarding outcomes, variations, and economic impacts of total joint surgeries. Special Surgery's CERT program is directed by Thomas P. Sculco, MD; Robert G. Marx, MD; Lisa A. Mandl, MD, MPH; and Michael M. Alexiades, MD. Patients will continue to be registered throughout the five-year grant, with an expected enrollment of 20,000 patients. According to Dr. Mandl, a joint replacement that needs to be revised has traditionally been considered a failure. However, just because a patient has not undergone revision surgery, it does not necessarily indicate that he had a good outcome. "The registry will allow us to learn what predicts why patients do well, and allow us focus on the things that will help ensure all patients achieve optimal outcomes."

"The registries are the crude oil of research, that ultimately need to be refined by insight, observation, and human intellect," says Dr. Hotchkiss. At Special Surgery, patient registries

Peter Torzilli, PhD, presented a lecture at Orthopaedic Grand Rounds at North Shore-Long Island Jewish Hospital and was an invited speaker at the ACL/OA BioMotion Retreat held at the Stanford University BioMotion Laboratory in Lake Tahoe, CA, and the Annual Meeting of the European Association of Craniomandibular Disorders in Zurich, Switzerland.

Andrew Weiland, MD, was honored by the American Society for Surgery of the Hand with a \$500,000 research endowment in his name. In recognition of his pioneering efforts in the field, The Andrew J. Weiland Medal for Innovation in Hand Surgery will be presented annually to an individual for outstanding clinical research in hand surgery.

Scott Wolfe, MD, was a Visiting Professor at the Orthopedic Seminars held at Lutheran Hospital, a Cleveland Clinic hospital. He was also the 2008 Invited Professor for the Wavering Lectureship at Evanston Hospital of Northwestern University, and the invited guest professor at the annual meeting of the Brazilian Hand Society.

Timothy Wright, PhD, lectured at the Maine Orthopaedic Review Course, and directed a four-day continuing education course on musculoskeletal biomechanics, held in Lake Placid, NY, sponsored by Cornell University. In addition, Dr. Wright coedited a special supplement on osteolysis and implant wear, published by the Journal of the American Academy of Orthopaedic Surgeons. He also served on NIH/NIAMS Study Sections reviewing Loan Repayment Program proposals and grant applications for Musculoskeletal Diseases Research Core Centers. Dr. Wright was also invited to join the faculty for the Inaugural Educational Conference of the International Congress for Joint Reconstruction in Orlando, FL.

Russell Warren, MD, was inducted into the American Orthopaedic Society for Sports Medicine Hall of Fame at the Society's Annual Meeting in Orlando, FL. ●

are enabling clinicians to examine a broad spectrum of musculoskeletal conditions and treatments, from autoimmune diseases to progressive surgical techniques, with the goal of improving patient care. ●

For a complete list of current registries, please visit www.hss.edu/d2r

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Our Patients

RISING ABOVE THE RIM

Alejo Rodriguez

A rising star on the Iona College basketball team, Alejo Rodriguez refused to be sidelined by crippling back pain. Team physician and HSS surgeon Riley Williams, MD, referred Mr. Rodriguez to Bernard A. Rawlins,

MD, (see other side), who identified the source of the pain. Mr. Rodriguez was suffering from spondylolysis – stress in one of his vertebrae. Dr. Rawlins performed spinal fusion surgery, using a bone graft and a metal implant to stabilize the spine. Following the procedure, Mr. Rodriguez followed a strict rehabilitation regimen, working closely with

trainers and coaches to build up the strength in his back. His determination paid off this season, when he returned to the game, playing at the level that he had been before the surgery. “I wanted to do everything I could to continue playing,” he says. “I am so thankful that Dr. Rawlins got me back on the court.”

Our Physicians

HELPING PATIENTS STAND TALL



Bernard A. Rawlins, MD
Attending Orthopedic Surgeon
Bernard A. Rawlins, MD, specializes in athletic spine injuries and is the spine consultant for the New York Knicks, New York Mets, and the Iona College Department of Athletics. A surgeon at HSS for over 13 years,

Dr. Rawlins has helped countless patients, such as Alejo Rodriguez (see other side), regain their mobility. He regularly treats those suffering from a wide range of spinal disorders and injuries including adult and pediatric scoliosis and kyphosis, neck and low back disc herniations, spondylolisthesis, stenosis, and fractures. His current

research is in gene therapy to promote bone healing. "Ultimately, we hope that this research will allow patients undergoing spine surgery to require less surgery, with less postoperative pain and a quicker return to recreational activities," he says.