

Discovery to Recovery

SPRING 2005

REPORT ON
RESEARCH
AT HSS

HOSPITAL
FOR
SPECIAL
SURGERY



Understanding Autoimmunity and Atherosclerosis

HSS Findings May Help General Population at Risk of Heart Disease

The promise of musculoskeletal research investigating autoimmune disorders may lead to insights into a widespread heart condition as well. Ongoing research at Hospital for Special Surgery (HSS) studying the relationship of systemic autoimmune disease and atherosclerosis is a good example of a single focus yielding clues that may be helpful to the general population. What Jane Salmon, MD, Collette Kean Research Chair, and Peggy

The search for clues was driven by the clinical experience of HSS physicians. “We were seeing young lupus patients, women in their thirties and forties, who were having heart attacks and it didn’t make sense. The question was why?” Dr. Salmon explains. As better treatments became available for treating acute conditions of lupus, such as kidney failure, doctors began seeing patients develop chronic disease like atherosclerosis. The message was

Cornell University, designed a case-controlled study whose pilot program started in 2001. The results of the full study were published in the *New England Journal of Medicine* in 2003. The nearly 200 lupus and 100 rheumatoid arthritis patients participating in the research project were recruited from the HSS lupus registry and rheumatologists practicing at HSS.

The study tested the hypothesis that atherosclerosis would not be solely attributable to traditional cardiovascular factors, but that it was related to systemic inflammation seen in lupus patients. The definition used for pre-clinical atherosclerosis was the presence or absence of plaque in the carotid artery as measured by a carotid ultrasound. The results found were definitive: With a median age of 44, the prevalence of plaque in the control population was 15 percent, but in lupus patients it was 37 percent. The results for rheumatoid arthritis patients were comparable to those in lupus.

“We also found that patients who had received aggressive immunosuppressive therapy were less likely to have atherosclerosis. That made us think that systemic inflammation is a very important cause of atherosclerosis and if we treated it early and aggressively we might prevent it,” says Dr. Salmon.



Kyriakos Kirou, MD, Peggy Crow, MD, and Jane Salmon, MD, (left to right) are collaborating on research into the relationship between systemic autoimmune disease and atherosclerosis.

Crow, MD, Benjamin M. Rosen Professor of Immunology and Inflammation Research, have learned from their five-year studies with lupus and rheumatoid arthritis patients may shed light on treating and preventing atherosclerosis, a serious and common problem that advances with age.

clear: physicians needed an enhanced understanding of this chronic manifestation in lupus patients.

Initial Results Confirm Hypothesis

Dr. Salmon, together with cardiologist Mary J. Roman, Professor of Medicine at Weill Medical College of

In This Issue:

- 2 Our Mission
- 3 Recent Breakthroughs
- 4 Funds for Discovery
- 7 Kudos
- 8 Research News & Notes

Editor-in-Chief
Josh Friedland

Assistant Editor
Rachel Olszewski

Contributing Editors
Bonnie Chernin
Reesa Kaufman
Mara Mazza
Matt McMillan

Design
Arnold Saks Associates

Photography
Robert Essel
Brad Hess
Mark Tuschman

Illustration
DK Publishing

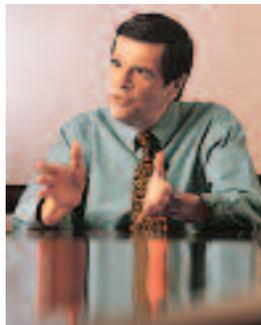
Printing
Monroe Litho

Hospital for Special Surgery is an affiliate of NewYork-Presbyterian Healthcare System and Weill Medical College of Cornell University.

Continued on page 6

Entering a New Era

This past year at HSS, we reached a milestone achievement in basic science research. For the first time in our history, we exceeded \$11 million dollars in federal grant funding, a phenomenal 280 percent increase since 1999. This exceptional level of support – in the form of competitive grants for groundbreaking musculoskeletal research – is a testament to the strength of scientific programs at this institution.



Francesco Ramirez, PhD

Strengthening Basic Science

Attaining this degree of success is the result of decades of dedicated research by the HSS scientific faculty. It is a feat that would not have been possible without the tremendous leadership of the Research Division by my colleague and predecessor, Adele Boskey, PhD. By her own example – as a model scientist

to make HSS the premier research center on musculoskeletal disease. To support the growth of our research enterprise, the Board of Trustees also agreed to undertake an unprecedented \$110 million fundraising campaign for research. Thanks to the generosity of individuals, foundations, and corporations, along with an infusion of public support at the local, state, and federal levels, we have raised over \$107 million for research, nearly attaining our Campaign goal, and in doing so, we have achieved some crucial objectives.

Rebuilding, modernizing, and expanding the Caspary Research Building – the physical infrastructure for research – has created a state-of-the-art research facility for the 21st century. Even more importantly, we have populated our laboratories with some of the best and brightest minds in musculoskeletal research – retaining our already excellent faculty and recruiting fresh talent who have added tremendous value to our investigations into the most complex musculoskeletal conditions.

Having built a world-class research faculty at HSS, it became crucial that

we integrate our research activities and maximize the benefits of teamwork. This has meant combining a series of distinct laboratories into four powerful disease-oriented research programs: Musculoskeletal Integrity, Autoimmunity and Inflammation, Arthritis and

Tissue Degeneration, and Tissue Regeneration and Repair. The reorganization of the Research Division into these new programs has been critical to fostering collaboration across disciplines by focusing on clinically relevant questions, improving extramural support, and increasing HSS participation in multi-institutional research initiatives. We have already reaped the rewards of our efforts in the form of record levels of NIH funding.

Looking Ahead

Having achieved so many of our objectives in the expansion of basic science at HSS, now is the time for the institution to focus on expanding and enhancing clinical research, the linchpin of HSS's bench-to-bedside research approach. Patient-oriented research forms the very foundation of HSS's reputation for superior patient care in the area of musculoskeletal disease.

Expanding and enhancing clinical research requires new leadership – a clinical scientist with the skills, expertise, and ideas to guide our patient-oriented research programs into the future. To this end, we have begun a search for a Director of Clinical Science who will lead this effort (orthopedic surgeon Robert N. Hotchkiss, MD, will oversee clinical research in the interim). The individual who will hold this new position will work in tandem with Lionel Ivashkiv, MD, David H. Koch Chair in Arthritis and Tissue Degeneration Research, who was recently appointed Director of Basic Science. This new team leading the Research Division will further the accomplishments we have made thus far in basic science and accelerate the continued growth of basic, clinical, and translational research at HSS.

For my part, I will be leaving HSS in July to join the University of Medicine and Dentistry of New Jersey – Robert Wood Johnson Medical School, where I have been appointed the Laura Gallagher Endowed Professor and Director of the Child Health Institute of New Jersey. There, I will continue my research investigating Marfan syndrome and other connective tissue disorders affecting children.

Working at HSS among such a stellar group of scientists and seeing the growth of the Research Division during my tenure as Chief Scientific Officer has been tremendously rewarding to me personally and professionally, and I plan to maintain close ties to HSS through continuing collaboration on research projects with my esteemed colleagues for many years to come.

Francesco Ramirez, PhD
Chief Scientific Officer



THIS GROWTH OF RESEARCH AT HSS, BOLSTERED BY AN INFUSION OF PRIVATE AND PUBLIC SUPPORT, HAS BEEN PHENOMENAL.

and pioneer in the field of mineralized tissue research – and by her strong advocacy for basic science at HSS, she was instrumental in bringing about a renaissance of research at this Hospital.

As Director of Research at HSS, not only did she raise the profile of the Hospital as a research institution here and abroad, she was also the motivating force in driving the Hospital toward the creation of a Strategic Plan for Research, adopted by the HSS Board of Trustees,

Using Orthopedic Outcomes Methods to Study Asthma

Associate Scientist Carol A. Mancuso, MD, has received a \$2.3 million grant from the National Heart, Lung, and Blood Institute (NHLBI), part of the National Institutes of Health, to test the effectiveness of a novel asthma education program in patients treated in the emergency room, a population which she calls “underserved” with respect to education about disease self-management.

Dr. Mancuso designed the program using skills she learned through her training at HSS and by leading diverse major studies of orthopedic surgery outcomes. For example, using innovative, patient-derived questionnaires that she developed in collaboration with other investigators at HSS, Dr. Mancuso was able to measure patients’ expectations of total hip arthroplasty, knee surgery, and shoulder surgery, as well as patients’ satisfaction with the outcomes of surgery. “Traditionally, physicians have developed questionnaires based on what they think are relevant and reasonable expectations,” she says. “However, patients may have different expectations.”

“It’s not the disease, it’s the methodology.”

Whether she is studying orthopedics or asthma, her approach is the same: patient-centered research. Her current investigation builds upon two previous studies. The first, funded by the Robert Wood Johnson Foundation and pub-

expectations of treatment, namely that asthma could be cured, demonstrated measurably lower quality of life. That study was followed by a NHLBI trial involving a multi-component, primary care-based education program aimed at improving quality of life by increasing patients’ knowledge and self-efficacy. “I want to help patients develop a sense of self-confidence in their ability to manage their disease,” Dr. Mancuso says.

Highly positive preliminary results led to the current emergency room-based study. Why the ER? “Being in the ER for asthma is major event. It represents a teachable moment when patients are more receptive to new ideas about how to get well and stay well,” says Dr. Mancuso. Many urban patients who go to the emergency room for asthma don’t have a regular doctor and are often from economically disadvantaged and underserved populations. “In the ER, staff can really impress on patients that self-management is critical and show them how to monitor symptoms and take their medications.”

Enrollment, totaling 296 adults in all, will occur at two Cornell-associated hospitals, New York-Presbyterian Hospital in Manhattan and New York Methodist Hospital in Brooklyn, and conclude in December 2009. ●

Potential Therapeutic Target for Rheumatic Disease Treatment

Senior Scientist Lionel B. Ivashkiv, MD, and his team in the Arthritis and Tissue Degeneration Program, are at the forefront of efforts to understand the pathogenesis of debilitating rheumatic diseases like lupus and arthritis. In an exciting breakthrough recently published in *Nature Immunology*, Dr. Ivashkiv and his colleagues identified a new signaling pathway that could be a target for future drug therapies.

The chemical pathway involves the body’s responses to potent substances called cytokines, a group of proteins that have a dramatic influence on the progression, or reversal, of diseases such as rheumatoid arthritis or lupus. While doctors have long known that cytokines can regulate diseases such as



Lionel B. Ivashkiv, MD

lupus, it is only now being recognized that lupus can also make cytokines fail to work properly. What is not fully understood is just how the cytokines become “switched on” to cause damage.

Interferons Play Key Role

The study focused on the key role of interferon chemicals, which are produced by the body and impact cytokine production and influence inflammation. One particular kind of interferon, IFN-alpha, was believed to play a key role in lupus and is a therapeutic target for this disease. Dr. Ivashkiv and his team found that inflammation, as it occurs in lupus patients, changed cellular responses to IFN-alpha and made cellular response more inflammatory and toxic.

Specifically, Dr. Ivashkiv believes that cytokine signaling is reprogrammed in patients with rheumatic diseases. This reprogramming amplifies the toxic aspects of cytokines, while compromising the effectiveness of “good cytokines” that patients produce in order to heal themselves.

“When we injected these IFNs in a normal mouse, there was no effect, but when we injected them in a mouse with lupus, we saw evidence of an influx of cells and the start of inflammation,” he explained.

“In lupus and arthritis, cytokine response problems prevent these chemicals from working properly to heal the body,” continued Dr. Ivashkiv. “If we can identify and influence this process, we can prevent the cycle of inflammatory response that damages these patients instead of helping them.” ●



Carol A. Mancuso, MD

lished in 2001, showed that patients who had less confidence in their ability to participate in the management of their asthma and patients who had unrealistic

Gosden Robinson Early Arthritis Center Mounts Concerted Attack on Rheumatoid Arthritis

Morning stiffness. Pain in one or more joints. Redness and swelling. These are some warning signs of rheumatoid arthritis (RA), a common systemic autoimmune disease that causes destruction of the joints and can result in life-threatening organ damage. In the past, patients diagnosed with RA often went on to a life of disability and pain due to delays in diagnosis and medicines that helped ease pain but could not halt disease progression. However, with the advent of a new generation of disease-modifying drugs the outlook for RA patients has dramatically changed for the better.

When it comes to treatment of RA, time is of the essence. According to HSS Physician-in-Chief Stephen A. Paget, MD, "Scientists have identified a window of opportunity where early aggressive treatment can prevent damage to joints from occurring, so that patients will be able to work, exercise, and live relatively normal lives." The key is identifying those patients who are apt to develop severe, joint-erosive disease and making sure they receive appropriate treatment as soon as possible.

With this goal in mind, HSS created the Gosden Robinson Early Arthritis Center (GREAC) to mount a three-pronged attack on early RA through patient care, research, and education. Funded with a generous grant from the family of Linda Gosden Robinson, the GREAC opened its doors to its first patients in the fall of 2004, guaranteeing them an appointment with an HSS rheumatologist within a week of first contacting the Center. Patients are seen twice at the Center, during which their symptoms are evaluated using the latest diagnostic techniques and treatment options are discussed. On the second visit, a decision is made as to how the patient can be best cared for in the long term: whether it is to stay with a center

rheumatologist or whether the patient should be referred to another type of physician or health care provider. If they choose, GREAC patients can volunteer to receive information about rheumatoid arthritis studies being done at HSS and give permission to be enrolled. HSS rheumatologist Theodore Fields, MD, serves as Clinical Director of GREAC.

Basic and Clinical Investigations

The research arm of the Center is seen as the cornerstone of advances in diagnostics and treatment of RA. Research Director, Lisa Mandl, MD, MPH, underscored the critical nature of the research effort: "The challenge of the next decade will be to discover ways to identify patients early in their disease course, so they can be treated before their bones and joints are irreparably damaged."

Currently, the Center is supporting four clinical and basic research projects. These include a study of the efficacy and cost-efficiency of two imaging modalities-Magnetic Resonance Angiography (MRA) and Power Doppler Ultrasound-that show promise for their ability to demonstrate joint



Theodore Fields, MD, and Lisa Mandl, MD, MPH.

damage before it is clinically evident in traditional radiography. A second clinical study is looking at a marker in the blood for early RA inflammation-antibodies for cyclic citrullinated proteins-which may be predictive of later severe erosive disease. On the basic science side is an effort to understand the mechanisms of tissue damage at the cellular level in early arthritis. That study found

that an antiviral agent, Type I interferons (IFNs), can suppress the migration of immune cells into inflammatory sites, suppress tissue damage by inhibiting the expression of tissue-destructive proteins, as well as almost completely suppress joint swelling. Finally, basic researchers are examining the causative role in early inflammatory arthritis of autoantibodies to B lymphocytes, white blood cells that play a critical role in defending the body against disease but which can attack the body's own tissues when B cell tolerance is broken.

Outreach and Education

The third arm of the GREAC is a comprehensive education initiative reaching out to both physicians and patients. The Center conducted two on-site continuing medical education (CME) courses for primary care physicians to help them to better understand new diagnostics and treatments for RA. Over 200 "front-line" physicians attended these courses in the fall of 2004. The CME program has been posted on the HSS Web site and 30,000 CD-ROMs have been sent to primary care physicians around the country. The HSS Web site also houses a section dedicated to the GREAC that provides a description of the Center's services and contact information to make access to the Center as easy as possible (this site can be found at www.hss.edu/Centers/Early-Arthritis-Center). Finally, the Gosden Robinson Center was featured in a special supplement to the *New York Times Magazine* in December 2004.

Despite dramatic improvements in our understanding and treatment of rheumatoid arthritis over the past decade, this disease continues to cause significant disability and impairment. The earlier appropriate treatment starts, the better are the short- and long-term outcomes for the patient. By bringing together physicians, scientists, and other health care specialists to address RA at its root, the Gosden Robinson Early Arthritis Center is poised to become a vital resource for patients and physicians battling this debilitating disease. ●

New Laboratory for Connective Tissue Disorders

In 1969, Mary Kay and James D. Farley gave birth to their youngest child, Andrew. At six weeks of age, Andrew was diagnosed with infantile idiopathic scoliosis, and so began the Farley family's quest to obtain the very best treatment for their son, which brought them to Hospital for Special Surgery. While the Hospital encounters so many concerned parents seeking care for a son or daughter, the Farleys were certainly unique and possibly extraordinary, in that their quest inspired a life-long commitment to prevent future children from struggling with Andrew's debilitating condition. Recognizing the Hospital for its excellence in clinical care and musculoskeletal research, the Farley family chose to pursue both facets of their family's quest at HSS.

A Mother's Mission

Through her son's need for ongoing care, Mrs. Farley observed the staff and services of the Hospital firsthand. And her dedication grew as she learned more about HSS. After more than 10 years partnering with David B. Levine, MD, Chief Emeritus of the HSS Scoliosis Service, and countless number of Hospital staff in Andrew's care, Mary Kay Farley was asked to join the Hospital's Board of Trustees in 1980 as a dear friend and supporter of this institution. Because of her keen interest in and dedication to the field of orthopedics, Mrs. Farley was later appointed to the National Board of the Orthopedic Research and Education Foundation as one of its first non-professional members. And most recently, Mrs. Farley was made an honorary member of the American Academy of Orthopaedic Surgeons.

"Mary Kay Farley is one of the Hospital's most beloved trustees," said Aldo Papone, Co-chair, Board of Trustees. "Her dedication and support of Special Surgery is a tradition she has carried on from her parents, Mr. and Mrs. Emmet E. Tracy, who dedicated the Hospital's main lobby in honor of their friend Henry U. Harris, Jr., HSS Chairman Emeritus. Her commitment to improving the treatment of muscu-

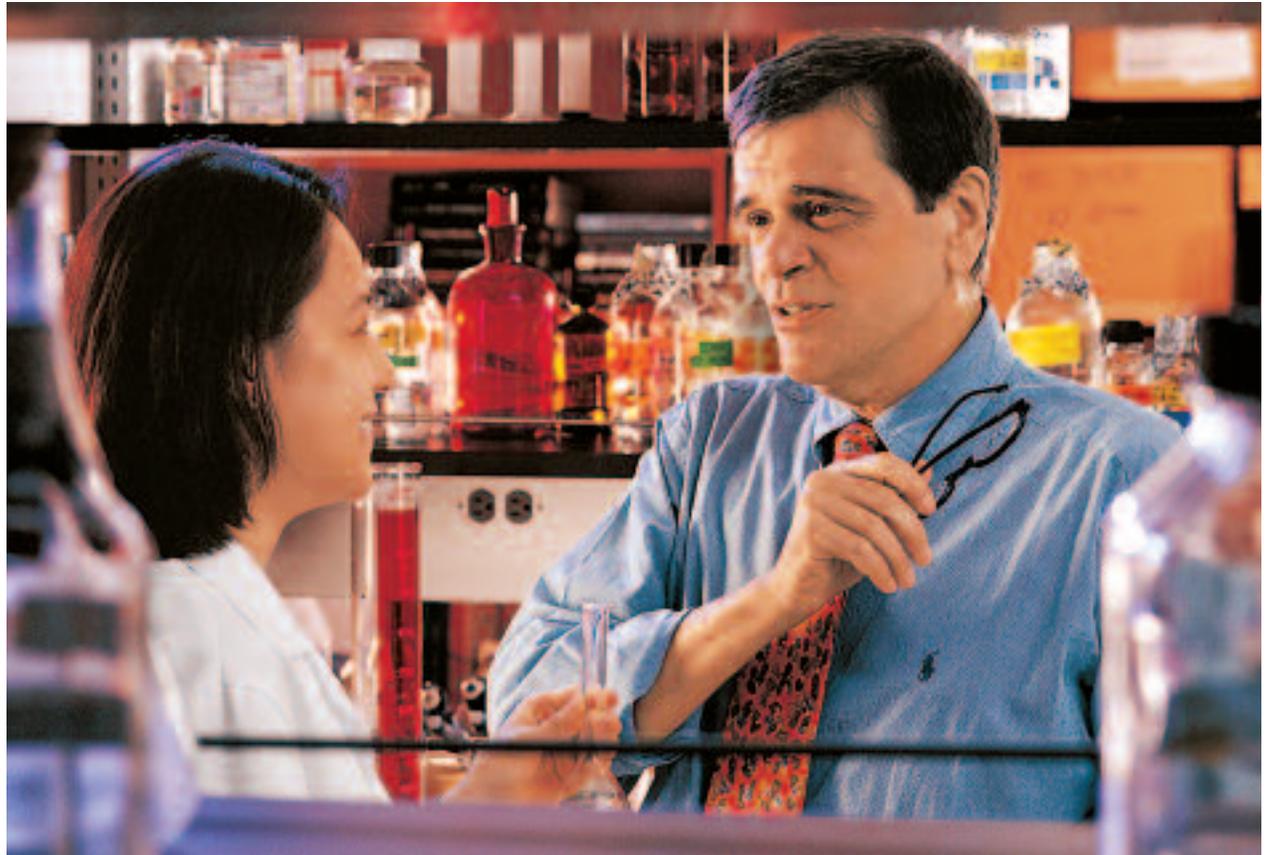
loskeletal diseases through knowledge and research has been a gift in and of itself to this institution."

Gift Supports Pioneering Research

Members of the HSS community gathered at a ceremony and reception this past September to honor Mrs. Farley

threatening condition," said Mary Kay Farley. "We have every confidence that the investigations conducted here will provide important insights into a wide range of musculoskeletal disorders."

These unmatched research capabilities and competencies have led to the Hospital's largest federal research award:



and her family with the dedication of the James D. Farley Family Laboratory for Connective Tissue Genetics, which recognized their extraordinary \$500,000 gift to the Hospital. Located on the seventh floor of the newly renovated Caspary Building, the laboratory is the primary site for scientific investigations on connective tissue disorders like Marfan syndrome.

It is estimated that at least 1 in 5,000 people in the United States have Marfan syndrome, a heritable condition that affects the connective tissue. The primary purpose of connective tissue is to hold the body together and provide a framework for growth and development. In Marfan syndrome, the connective tissue is defective and does not act as it should. Because connective tissue is found throughout the body, Marfan syndrome can affect many body systems, including the skeleton, eyes, heart and blood vessels, nervous system, skin, and lungs.

"It gives my family and I great satisfaction and comfort to support the critical research HSS is undertaking to solve the perplexing genetic riddle of this life-

an unprecedented \$6 million grant from the National Institute of Arthritis and Musculoskeletal and Skin Diseases, a division of the National Institutes of Health, for a multi-center translational research project on Marfan syndrome. HSS, Johns Hopkins University, New York University, and University of Oregon Health Sciences will collaborate on a multidisciplinary investigation to uncover new therapeutic strategies for Marfan syndrome. This consortium, which brings together experts in biochemistry, cellular biology, cardiovascular biology, developmental biology and molecular genetics, will result in tangible benefits for those living with this disorder.

"The long-term goal of this program is to translate basic research discoveries in matrix biology into productive therapeutic strategies for the management of individuals with Marfan syndrome and related disorders," said Francesco Ramirez, PhD, Chief Scientific Officer. "We would not have received this substantial award without the generous seed funding from the Farley family, which continues to be instrumental to ensuring the swift pace of this research." ●

Francesco Ramirez, PhD, is known worldwide for his pioneering research into the genetic basis of heritable connective tissue disorders, and this new laboratory provides the first critical mass of genetics research expertise in HSS history.

For information on how to support the Campaign for Research, including planned giving options, please contact the Development Department at 212.606.1196.

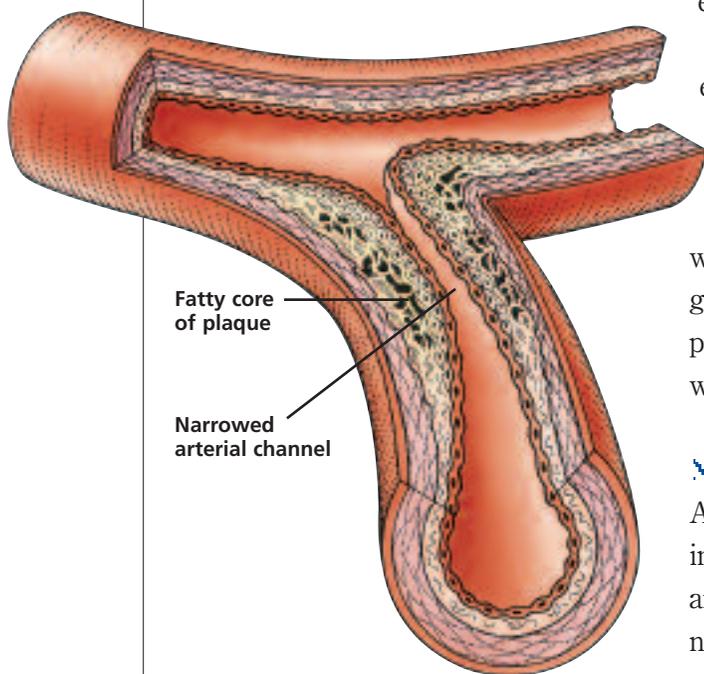
Continued from page 1

New study seeks genetic link

Since the case-controlled study distinguished lupus patients who have carotid plaque from those lupus patients who didn't, the two groups provided a good foundation for further analysis. "Very preliminary data using micro-array gene expression analysis suggests that there might be differences in the level of expression of certain genes between those patients with and without plaque," explains Dr. Crow.

Dr. Crow is the principal investigator of a National Institute of Health (NIH) grant to look at the two groups and study the respective gene products of endothelial cells (the cells that line blood vessels), platelets (cells which mediate clotting), and macrophages (inflammatory cells which can block the blood vessel wall). "We're collecting a good amount of data looking at genes that are either known to be relatively specific for those cell types or else implicated in atherosclerosis in the general population," she adds.

Dr. Salmon, co-investigator for the study, is helping to identify which patients are most relevant for further research. Dr. Kyriakos Kirou, MD, a collaborator on the study, is using real-time PCR (polymerase chain reaction) analysis to identify gene products that could



Atherosclerosis occurs when plaque (fatty substances, cholesterol, inflammatory cells, cellular waste products, calcium, and other substances) build up in the lining of an artery. To assess patients for the presence of atherosclerosis, carotid arteries were examined by ultrasound. The presence of plaque or atherosclerosis is a potent predictor of clinical events, usually myocardial infarction.

Center Promotes Clinical and Translational Research at HSS

Within the walls of Hospital for Special Surgery exists an elite group of scientists and physicians who are paving the way for advances in clinical research aimed at finding new ways to treat and prevent immune-mediated inflammatory diseases. Expertise in these fields has come together in the Hospital's FOCIS Center of Excellence (FCE), which comprises research programs, core facilities, patient registries, and educational initiatives.

Under the direction of Jane Salmon, MD, the FCE encompasses a wide scope of investigations into immune-mediated diseases and inflammatory-mediated tissue injury pursued by HSS scientists and in collaboration with Weill Medical College of Cornell University.

Recognized as a Center of Excellence in 2003, Hospital for Special Surgery received this honorable designation by the Federation of Clinical Immunology Societies (FOCIS) due in part to the tremendous success of its basic and clinical immunology research program. FOCIS supports organizations that approach research into immune-mediated diseases from a multi-disciplinary perspective, aiming to improve healthcare through advances in immunology. HSS is one of 17 FCEs and 9 affiliate FCEs, and its scientists are among 30,000 represented by FOCIS. Members of FOCIS are encouraged to collaborate with scientists at other FOCIS Centers at academic institutions around the world.

Expanding the Boundaries of Autoimmune Disease Research

"Clinicians and scientists are increasingly collaborating to identify and address questions important to musculoskeletal and autoimmune diseases," explained Peggy Crow, MD, Director of the Autoimmunity and Inflammation Program at HSS. "With additional financial support, my colleagues and I aim to further develop the collaborative framework of the FCE."

Chief among the objectives for the FCE is to extend this multidisciplinary approach to immune-based diseases to new investigators and clinical problems; incorporate additional disease-focused programs of research and patient care; increase awareness of and public support for immunology education programs; and facilitate the expansion of patient registries and resources. ●

potentially be associated with atherosclerosis. He will measure how much of any given messenger RNA for a given gene is present in blood from the different patient groups and perform the statistical analysis to determine if gene expression differs between a patient with carotid plaque and one without atherosclerosis.

"The studies are in progress and we have some clues that some of the gene products may be more frequent in patients with plaque than in patients without plaque," says Dr. Crow.

Next Steps

Although the second phase is still ongoing, Dr. Crow, Dr. Salmon and Dr. Roman are already turning their attention to next steps for consideration in their study of mechanisms of accelerated and more prevalent atherosclerosis in patients with systemic autoimmune disease.

One possibility is to embark upon an interventional study that examines viable treatments to prevent disease. This approach requires further research to identify sensitive, non-invasive tech-

niques to assess changes in the degree of atherosclerosis. Another possibility under review is related to measurements of arterial stiffness that were collected during the case-controlled study. Dr. Roman looked at the pressure and waves in the arteries in lupus and rheumatoid arthritis patients and found that there was an increase in arterial stiffness in the patients, even in those who didn't have carotid plaque. A future study may be to further document arterial stiffness in patients and define its molecular mechanism.

"If we can figure out what molecules and proteins are associated with a particular condition, we can learn about what causes that condition, and thereby define targets for therapeutic intervention," says Dr. Crow.

The studies underway, and those planned for the future, may show how to alleviate atherosclerosis not only for patients with systemic autoimmune disease but for the general population as well. This work is a prime example of how musculoskeletal research can impact broadly on overall health. ●

Peggy Crow, MD, has been elected President of the American College of Rheumatology for 2005-2006. She has been a member of the ACR Board of Directors since 2000.

The New York Chapter of the Arthritis Foundation has named **Matthew Cunningham, MD, PhD**, the recipient of a one-year, \$50,000 award to study gene-mediated minimally invasive spinal fusion.

The Orthopaedic Research and Education Foundation has awarded **Michael Gardner, MD**, and co-investigator **Mathias Bostrom, MD**, a one-year, \$15,000 OREF Resident Research Grant and the Marshall R. Urist Resident Research Award for their investigations into the effects of intermittent mechanical compression on fracture healing.

USRowing has awarded **Jo A. Hannafin, MD, PhD**, the Jack Kelly Award, which is given annually to an individual who demonstrates remarkable achievements in rowing and success in their career.

Lionel Ivashkiv, MD, has received a five-year, \$1,740,375 grant from the NIH to advance his research into cytokine signaling in inflammatory arthritis. The NIH has also awarded Dr. Ivashkiv a five-year, \$1,683,000 renewal grant to study cytokine regulation of rheumatoid arthritis (RA) synovioocyte phenotype. In addition, Dr. Ivashkiv has received a five-year, \$1,912,500 grant from the NIH to further his studies into steroid therapy and cytokines in rheumatic disease.

Michael Lockshin, MD, has been named Editor-in-Chief of *Arthritis and Rheumatism*, the premier journal in rheumatology.

Gregory Lutz, MD, has received the Rosenthal Award from the American Academy of Physical Medicine and Rehabilitation. In addition, Dr. Lutz has received a one-year, \$41,240 grant from the International Spinal Injection Society to investigate aggressive lumbar discography as a useful predictor of treatment response.

Lisa Mandl, MD, MPH, has received a five-year, \$500,000 Mentored Patient-Oriented Research Career Development Award to support investigations into the treatment of carpometacarpal joint osteoarthritis. In addition, Dr. Mandl received a four-year, \$330,000 Arthritis Investigator Award from the Arthritis Foundation.

Eric Meffre, PhD, has received a five-year grant in collaboration with Mount Sinai School of Medicine to study molecular defects in the development of B cells, the immune system component responsible for producing antibodies.

The New York Chapter of the Arthritis Foundation has honored the extraordinary work of **Stephen A. Paget, MD**, Physician-in-Chief and chairman of the Division of Rheumatology at HSS, by presenting him with their Lifetime Achievement Award.

In November 2004, **Laura Robbins, DSW**, was elected Chair of the Arthritis Foundation for 2005-2006. She has served as treasurer of the Foundation since 2002 and a volunteer with the Atlanta-based organization for more than 15 years.

Jonathan Samuels, MD, has received a three-year, \$150,000 research grant from the American College of Rheumatology Research and Education Foundation to investigate autoimmunity and the loss of B cell tolerance in rheumatoid arthritis.

Thomas P. Sculco, MD, Surgeon-in-Chief of HSS, has been named Treasurer of the Knee Society and elected to its Board of Directors. In addition, Dr. Sculco has been named the 2005 recipient of the Gold Medal for Achievement in Clinical Medicine by the College of Physicians and Surgeons of Columbia University.

Jose Toro, MD, has received a one-year, \$25,000 grant from the Orthopaedic Trauma Association to study the healing effects of bisphosphonates and parathyroid hormones on an osteoporotic fracture in an animal model.

The National Institutes of Health has awarded a two-year, \$170,000 grant to **Peter Torzilli, PhD**, to investigate deformation-dependent enzyme cleavage of collagen.

The Hip Society has awarded **Eduardo Salvati, MD**, **Alejandro González Della Valle, MD**, and **Geoffrey Westrich, MD**, the John Charnley Award for identifying genetic variations that increase susceptibility to thromboembolism (blood clots) following total hip replacement surgery. This prestigious award recognizes innovative research encompassing important advances in the management of hip disorders. Co-authors of the study included Adam Rana, MS, Larry Specht, MD, Babette Weksler, MD, Pin Wang, PhD, and Charles Glueck, MD.

Adele L. Boskey, PhD, Elected to American Association for the Advancement of Science



Adele Boskey, PhD

Adele L. Boskey, PhD, Starr Chair in Mineralized Tissue Research, has been named a Fellow of the American Association for the Advancement of Science (AAAS), joining a select group of preeminent scientists from around the world.

A highly respected and leading scientist in the field of mineralized tissue

research, Dr. Boskey was nominated by her peers and elected to this status based on her achievements and successful efforts to advance science. Founded in 1848, the internationally renowned AAAS is devoted to the progression of science through education, leadership, and professional involvement. In addition to planning activities for its members, the AAAS publishes the leading research journal *Science*.

Of this award, which acknowledges her groundbreaking studies of the formation of teeth and bones, Dr. Boskey said, "As the first researcher at HSS to be recognized in this way by the AAAS, I am truly honored."

A Pioneer in Mineralized Tissue Research

For nearly four decades, Dr. Boskey has dedicated her career as a biophysical chemist to understanding the development of bones, calcified cartilage, and teeth, as well as calcific deposits of soft tissues. Along with her collaborators at HSS, Dr. Boskey pioneered

infrared microspectroscopy as a method to study bone at the microscopic level. First developed and used by the military, this technique enables researchers to obtain structural information about the mineral and organic matrix of bone at specific anatomical locations. Dr. Boskey was among the first to apply infrared microspectroscopy to study patients with osteoporosis. Finding ways to combat this disease has been of great interest to Dr. Boskey since she first came to HSS 34 years ago.

An Accomplished Professional

Dr. Boskey's career has flourished within the borders of HSS and beyond. She is the recipient of four major National Institutes of Health (NIH) grants, including an award that has been renewed continuously since 1972, which supports her studies of the molecular basis of bone formation and changes that occur in bone mineral and matrix in musculoskeletal diseases. She served as the first woman President of the Orthopaedic Research Society, and one of the first women to head an NIH council.

Recognizing this landmark achievement, the first for any HSS scientist in the institution's history, Francesco Ramirez, PhD, Chief Scientific Officer, said, "Dr. Boskey is an esteemed researcher who has paved the way for scientists who are studying the pathology of mineralized tissue diseases and more effective treatments. She is quite deserving of this extraordinary honor." ●



Discovery to Recovery

News & Notes Research

Physicians, Scientists, and Friends Gather to Celebrate the Cadwell Legacy

Hospital for Special Surgery's Board of Trustees hosted a celebration in March to pay tribute to the legacy of longtime HSS patient and friend Franchellie "Frankie" M. Cadwell, who left an extraordinary \$9 million bequest to the Hospital in her will.

Ms. Cadwell lived with rheumatoid arthritis up until her passing in 2003. Ensuring her wishes to improve the lives of those stricken with rheumatic disease, HSS has established three endowed faculty positions in her name and those of her closest friends, an endowment for collaborative research with Weill Medical College of Cornell University, and a Center for the Diagnosis and Treatment of Autoimmune Ophthalmic Illnesses. HSS has also dedicated The Franchellie M. Cadwell Laboratories on the fourth floor of the Caspary Research Building in her honor.

Endowments Support Leading Investigators

Playing a key role in Ms. Cadwell's ability to live a full life was her physician, Dr. Sergio Schwartzman, who was appointed to hold The Franchellie M. Cadwell Chair. Dr. Schwartzman is a clinician-scientist special-



Sergio Schwartzman, MD, (left), Jane Salmon, MD, and Ioannis Tassioulas, MD.

izing in rheumatic disorders and has a particular research interest in autoimmune diseases of the eye. "It is a singular honor to be recognized by HSS with this chair," he commented. Dr. Schwartzman will direct the new Center for the Diagnosis and Treatment of Autoimmune Ophthalmic Illnesses.

Dedicating her career to investigating rheumatic and inflammatory diseases and advancing the Hospital's ability to treat

them is Senior Scientist Jane Salmon, MD, who was appointed to hold The Collette Kean Research Chair. Collette Kean was a close, personal friend to Ms. Cadwell and to HSS for many years. "With elegance and persistence, Collette Kean has established programs to help both patients and the institutions that care for them, and it's an honor to have my name associated with hers," Dr. Salmon remarked.

The Charles Christian Research Fellowship was presented to Ioannis Tassioulas, MD, Assistant Attending Physician at HSS and Assistant Professor of Medicine at Weill Cornell Medical College, in honor of Physician-in-Chief Emeritus Charles Christian, MD, who cared for Ms. Cadwell and her mother as their physician for many years. The Fellowship will support Dr. Tassioulas' research into the regulation of cytokine function in autoimmune diseases such as rheumatoid arthritis and lupus, as part of the HSS Arthritis and Tissue Degeneration Program.

In paying tribute to Ms. Cadwell, HSS Co-Chairman Aldo Papone said, "On behalf of the entire Board of Trustees, I want to say how grateful we are for this bequest. It will provide a permanent source of support to advance our understanding of rheumatoid arthritis and related diseases." ●