Message from Physician-in-Chief and Chief, Division of Rheumatology, Dr. Mary K. Crow

It is a pleasure to present the 2015 Annual Report of the Hospital for Special Surgery (“HSS”) Division of Rheumatology. Everyone involved in addressing our mission — our dedication to improving the lives of patients with autoimmune, inflammatory and musculoskeletal diseases — wants our colleagues across the country to share in our enthusiasm for the advances we are collectively gaining through research and collaborative care of our patients. Our goals are to achieve new and relevant knowledge that advances the health of patients — not only patients at HSS, but patients everywhere — and to train the next generation of rheumatologists as clinicians, scientists and future academic leaders. We want to make a difference — go beyond excellence — and our efforts involve not only our diverse faculty but also our students, fellows and close colleagues in social work, nursing and our Research Division.

Rheumatic diseases are among the most complex in all of medicine, and recent data demonstrate the striking and sobering impact of musculoskeletal diseases on disability and loss of health around the world. At the same time, the persistent and focused efforts of clinicians as well as basic and clinical scientists are chipping away at these disabling diseases and offering a brighter future for our patients.
Although HSS’s main campus is located on an island, Manhattan, what I observe is that our large and diverse faculty are creative in finding ways to influence the lives of patients and the field of rheumatology far beyond HSS. The initiative and dedication of my colleagues has already made substantial progress in diseases, such as lupus, which have traditionally been our strength. I am pleased to review some of the areas of significant academic and clinical achievement, for which my colleagues deserve tremendous credit.

Academic activities and patient care in the HSS Division of Rheumatology are organized around disease-focused centers of excellence, loose aggregates of committed faculty, along with colleagues who provide important services to our patients. The Center concept stimulates development of faculty-initiated projects that have the potential to augment our current programs in patient or professional education, improve clinical outcomes, effectively communicate our services and initiate and organize research projects. In the past year, the productivity of our Inflammatory Arthritis Center of Excellence (IACOE), directed by Vivian P. Bykerk, MD, has realized the potential that we hoped might be possible when Dr. Bykerk joined our division three years ago. The focus of the IACOE is on clinical research, an area that had previously not been emphasized at HSS but is now establishing a national presence, particularly based on our research programs in rheumatoid arthritis (RA). In 2014, HSS was named a collaborating center of the Accelerating Medicines Partnership (AMP) program of the National Institutes of Health (NIH). This is an important initiative that has already made substantial progress in defining the most consistent and informative approach to the study of synovial tissue in patients with RA. Dr. Bykerk is the lead HSS investigator on the study, together with Alessandra B. Pernis, MD, and Lionel B. Ivashkiv, MD, physician scientists in our Research Division, as well as Robert B. Darnell, MD, the Director of the New York Genome Center. Dr. Bykerk also serves on the National Steering Committee for the AMP program, guiding the study as it moves from establishing the procedures for biologic sample processing to development of high-priority research questions that can be pursued by the AMP investigators.

At HSS, Susan M. Goodman, MD, and Dr. Bykerk are collaborating on enrollment of patients with RA in a clever study designed by Dr. Goodman. To characterize the biologic basis of RA flares, patients scheduled for joint replacement surgery who have discontinued disease-modifying therapy prior to surgery are followed to assess the distinctions in cellular and molecular features of joint tissue in those who flare post-op versus those who do not. Preliminary data indicate increased inflammatory mediators in synovial tissue from patients who later flare. Dr. Bykerk is also leading the analysis of data from patients in the Canadian cohort of patients with early inflammatory arthritis (known as the CATCH cohort) and has initiated development of a similar multicenter observational cohort in the U.S. Important results from the Canadian cohort include the observation that earlier time to disease remission predicts sustained clinical remission in patients with early RA as well as the value of subcutaneous methotrexate in comparison to oral methotrexate in treatment of patients with early RA.

Our physician scientists are also making significant progress in their studies of the biological mechanisms behind the inflammation and bone resorption that are features of RA. Dr. Ivashkiv’s laboratory was among the first to draw attention to activation of the Jak-STAT cytokine signaling pathway in the rheumatoid synovium, an observation that led to the recently approved Jak inhibitors for treatment of RA. Currently, Dr. Ivashkiv’s laboratory is making important observations on the epigenetic regulation of cytokine gene expression. His lab has identified inhibitors of a protein called BET that alters transcription of cytokine genes regulated by the Jak-STAT pathway. These inhibitors may represent an attractive and novel therapeutic approach to inhibiting inflammatory disease and bone resorption. Dr. Ivashkiv’s outstanding and clinically relevant research productivity and history of effective mentoring are among the many reasons for his appointment this year as HSS Chief Scientific Officer. Dr. Ivashkiv succeeds Steven R. Goldring, MD, who did an outstanding job leading our Research Division for the past nine years. Dr. Ivashkiv, David H. Koch Chair for Arthritis and Tissue Degeneration Research who was also named the Richard L. Menschel Research Chair at HSS, will be a great partner in continuing our growth of clinical and translational rheumatic disease research at HSS.

Our Scleroderma, Vasculitis & Myositis Center of Excellence, directed by Robert F. Spiera, MD, has also seen great growth, particularly in interventional studies seeking new therapeutic agents for those challenging diseases. Dr. Spiera has been a key investigator in the collaborative studies of rituximab in ANCA-associated vasculitis and defined the particular value of rituximab therapy for disease relapse. Lindsay S. Lally, MD, one of our stellar rheumatology fellowship graduates, joined our faculty this year and published an interesting study documenting increased Rho-kinase activity in temporal artery biopsy samples from patients with giant cell arteritis. Rho-kinases are involved in important signaling pathways in lymphocytes and may represent rational therapeutic targets. Jessica K. Gordon, MD, and Dr. Spiera have designed and led novel studies of tyrosine kinase inhibitors for treatment of patients with systemic sclerosis. In studies published this year, Dr. Gordon studied gene expression in
patients with SLE and APS came to fruition. In 2015, the tremendous 10-year effort in lupus patients.

In SLE, we are looking forward to tracking the data from studies of interferon-targeted therapies that are candidates for eventual use in lupus patients.

Systemic lupus erythematosus (SLE) is a disease that has captured the imagination of our HSS clinicians and physician scientists for more than 40 years. Our current academic and clinical programs in SLE, as well as the related disease antiphospholipid syndrome (APS), are under the umbrella of our Lupus and APS Center of Excellence, directed by Jane E. Salmon, MD. The Steering Committee that guides our programs in lupus and APS takes responsibility for screening and reviewing protocols for interventional trials. We are particularly interested in participating in trials that test therapeutic agents targeting molecules that have been studied in our laboratories. I am excited to follow the results of current clinical trials testing inhibitors of the type I interferon pathway in patients with SLE. My laboratory, with the important contribution of Kyriakos A. Kirou, MD, was among the first to document broad expression of a gene signature driven by interferon in the blood of lupus patients. Over the past 10 years, we have contributed to the strong case supporting the hypothesis that type I interferon is a central mediator of disease in SLE. We are looking forward to tracking the data from studies of interferon-targeted therapies that are candidates for eventual use in lupus patients.

In 2015, the tremendous 10-year effort expended by Dr. Salmon and her collaborators in their investigation of pregnancy in patients with SLE and APS came to fruition with the publication of three excellent studies. Among other important observations, the studies identified altered levels of angiogenic factors early in pregnancy in those patients who experienced adverse pregnancy outcomes. These studies may provide biomarkers that can be used to guide patient management and ultimately improve both fetal and maternal outcomes in patients at risk for complications. The HSS engagement in efforts to advance understanding of lupus is not limited to the activities of our faculty and staff. We are grateful to the leadership of HSS President and Chief Executive Officer Lou Shapiro, who served for the second consecutive year as Co-Chair of the Alliance for Lupus Research Walk to Cure Lupus.

Our HSS Academy of Rheumatology Medical Educators, led by Stephen A. Paget, MD, and Jessica R. Berman, MD, continues to grow support for pilot education research studies with the goal of developing novel approaches for the education of professionals, trainees and patients. Theodore R. Fields, MD, is leading a study to improve compliance with medications and decrease flares in patients with gout, and Dr. Jessica Berman is extending her studies based on her design of the New York Rheumatology Objective Structured Clinical Examination. The impact of the Academy extends beyond HSS to involve colleagues from New York area medical centers. Some of our fellows are participating in these pilot education research grants, and all three of our second-year fellows have enrolled in a master’s program in epidemiology to provide them with the skills they will need to develop careers that include a significant focus on clinical research studies. Anne R. Bass, MD, continues to lead our Rheumatology Training Program, and we congratulate her on her new appointment as Chair of the ACR Committee on Rheumatology Training and Workforce issues. In the past year, Alexa B. Adams, MD, was promoted to Associate Professor of Clinical Pediatrics and was named Director of our Pediatric Rheumatology Training Program.

Finally, 2015 has been a year in which our common vision of providing high-value care for our patients with rheumatic disease has gained focus with the recruitment of Catherine H. MacLean, MD, PhD, to our faculty and as HSS Chief Value Officer. We aim to achieve near-perfect care of our rheumatic disease patients who require orthopaedic surgical procedures, and with the leadership of Dr. Susan M. Goodman and Linda A. Russell, MD, and in collaboration with our orthopaedic surgeons, we are determining the predictors of excellent surgical results. Dr. Goodman has published studies documenting the generally excellent outcomes of patients with RA and osteoarthritis following joint replacement surgery. Dr. Russell, Chief of our Perioperative Medicine Division, has developed what is arguably the most comprehensive and systematic approach to assess and manage the medical comorbidities of rheumatic disease patients who undergo arthroplasty surgery. I also congratulate Dr. Russell on being named the Anne and Joel Ehrenkranz Chair in Perioperative Medicine in 2014.

We are always interested in hearing the ideas and suggestions of our colleagues around the country, and appreciate your interest in the work we are doing at HSS.
Introduction

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What does it mean to go beyond excellence at HSS?

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Hospital for Special Surgery (HSS) strives to achieve the best possible outcomes for patients suffering from rheumatic disease. To this end, the Division of Rheumatology coalesces around three pillars of academic medicine that enable us to advance the field in multiple dimensions: cutting-edge scientific and translational research; a comprehensive approach to education that integrates mechanisms of disease with clinical training; and, finally, a commitment to achieving peerless patient care. The HSS Division of Rheumatology comprises the largest group of rheumatologists in the U.S., who, through a strong sense of collaboration and curiosity, are unraveling the complex molecular pathologies underlying rheumatic illness at a level that results in meaningful improvements in patient lives.
Innovations and Advances

As our strong record of peer-reviewed publications and presentations at rheumatology and specialty scientific conferences attest, HSS is home to a rich, collaborative culture of scientific and clinical research. HSS faculty are defining the complex molecular pathways and pathologies underlying rheumatologic conditions, laying the groundwork that will ultimately translate cutting-edge science into better clinical care. The collaborative studies of our patients — in the clinic and the lab — led by clinicians, physician scientists and basic researchers, are identifying novel treatment targets — many of which are or will soon be under investigation in therapeutic trials — and guiding us toward new standards of rheumatology practice.

A Commitment to Education

Our dedication to our fellows is second only to our dedication to our patients. At the core of the HSS mission to go beyond excellence is not only our commitment to train the next generation of outstanding rheumatologists but to foster and mentor future leaders in academic medicine. In addition to our formal curriculum for medical students, residents and fellows, and our weekly lectures by leaders in the field, HSS Rheumatology is creating novel methods and tools to advance professional education. HSS rheumatologists developed the HSS Academy of Rheumatology Medical Educators, supporting innovative education research studies. Our faculty also contribute to progress in the field through their leadership roles in the American College of Rheumatology (ACR), the Rheumatology Research Foundation, and disease-focused research-funding organizations.

Improving Patient Outcomes

The ultimate goal of HSS’s commitment to cutting-edge research and providing the best in rheumatology education is to improve patient outcomes and lives. Our rheumatologists go beyond providing outstanding patient management to making HSS the best a hospital can be. Members of our faculty provide leadership in administrative and clinical management roles, engaging with multidisciplinary teams to ensure that our patients achieve optimal outcomes in an environment that is both personal and that meets our high standards in every way. Whether we are identifying predictors of successful joint surgery, identifying the biomarkers of successful pregnancy outcome in lupus patients, or promoting improved medication compliance through our patient support programs, our focus is on doing the best we can for our patients.
Chromatin Fiber, demonstrating DNA, RNA, nucleosome, and histone octamers.
INNOVATIONS AND ADVANCES

The HSS commitment to excellence is reflected in individual and collaborative studies that relate biologic insights to detailed patient data from studies of our well-established and new patient cohorts.

HSS is currently a designated research center of the NIH Accelerating Medicines Partnership program, a public-private partnership that aims to transform the current model for developing new diagnostics and treatments by identifying promising biological targets through the study of involved tissue. As part of the program, HSS is focusing on the pathophysiological mechanisms underlying rheumatoid arthritis flares in hopes of translating molecular insights into more effective therapies. HSS also maintains a comprehensive collection of information through extensive patient registries with the goal of discovering biomarkers and clinical predictors that could help improve and optimize diagnosis and management.

As they’ve done for decades, HSS faculty aspire to change the practice of rheumatology for the benefit of patients. Part of this commitment is discovering novel pathways and mechanisms at the root of rheumatologic disease, specifically those mechanisms that support new ways of thinking about the disease process and how it can be modified and controlled. For example, a study led by Dr. Lionel B. Ivashkiv and published last year in *Nature Communications* describes promising therapeutic avenues for quelling inflammation and estrogen deficiency–mediated pathologic bone resorption. The work identified epigenetic modifiers of osteoclastogenesis that could be targeted by novel small molecule therapies and reflects a growing field of investigation in rheumatology and other clinical disciplines, that is, identifying therapies that target epigenetic modifications that contribute to disease. Other research by Dr. Ivashkiv and colleagues is identifying potential therapeutic approaches to suppressing inflammatory cytokine production and the altered function of synovial fibroblasts in RA.

Work by Dr. Alessandra B. Pernis has demonstrated enhanced Rho-kinase (ROCK) activation in patients with SLE and giant cell arteritis, suggesting that the ROCK pathway could represent an important therapeutic target in the two conditions, while other HSS research is helping uncover the role of type I interferon, Toll-like receptors, and stromal cell–dendritic cell interactions in activating and mediating altered immune responses in several systemic rheumatic diseases. The contribution of synovial inflammation to osteoarthritis, the role of the Jak-STAT pathway and iRHOM2 in RA, and the gene expression signatures that predict lupus flare are other areas of interest, each pointing to promising pharmacotherapeutic avenues worth pursuing in future research.

This year has seen the culmination of a 10-year project led by Dr. Jane E. Salmon that challenges years of dogma that suggested that women with SLE should avoid getting pregnant. By identifying clinical and biologic markers, we can now risk-stratify patients with SLE, antiphospholipid syndrome (APS), or both. Her work shows that the majority of women with these conditions who conceive while their disease is quiescent do very well and successfully complete their pregnancies. Studies in animal models have revealed the pathologic mediators of placental inflammation in SLE and APS including the complement cascade and tumor necrosis factor (TNF)—which are potential treatment targets being pursued.
Epigenetic modifiers are selective and safe

What has your research taught us about the therapeutic potential of epigenetic modifiers in rheumatologic disease?

Our work, in the context of the field, suggests that epigenetic modifiers — or small molecules that target epigenetic regulators that modify histones or remodel nucleosomes — are surprisingly selective and safe. They appear to only target a subset of inflammatory genes, and work by our collaborators at GSK and others has shown they are safe in animal models and — so far — in Phase I trials in humans.

Have you identified any specific therapeutic targets?

We have shown that targeting bromodomain and extra-terminal motif (BET) proteins effectively suppresses interferon responses and inhibits osteoclast differentiation in vitro and in inflammatory models. The former suggests potential relevance for SLE, the latter for suppressing pathological bone loss in arthritis. The bigger picture is that this is a new therapeutic space with the potential of identifying many new therapeutic targets, and we have already found another target whose inhibition suppresses bone loss in an osteoporosis model.

How is your work changing how women with SLE and APS are counseled regarding pregnancy?

For years physicians were advising patients with lupus not to get pregnant — that it was just too dangerous. But now, using clinical and biologic markers, we’re able to stratify patients according to their risk for poor outcomes. It turns out that most pregnant women with lupus — and also those with antiphospholipid antibodies — do fine. Among patients with inactive lupus, 20% will have some pregnancy problem, but only 12% have severe complications, like preeclampsia. We can now reassure most women with lupus that their pregnancies should be uncomplicated. And, in high-risk patients, we’re diligent about monitoring them. Timely risk-stratification of patients is important for effective clinical care, and it will also allow for optimal allocation of healthcare resources.
What potential therapeutic targets has your research identified that may benefit SLE and APS patients with high-risk pregnancies?

Our previous animal studies that model human pregnancy complications identified the inflammatory pathways that can damage the developing placenta in lupus and APS, including complement proteins and TNF. We confirmed a role for these mediators in women with serious adverse pregnancy outcomes. Our discoveries provide the rationale for studying interventions that target such pathways in patients. Now that we can identify pregnancies at high-risk and we have targets for treatment, we can design trials to prevent anticipated poor pregnancy outcomes. At the moment we’re planning the first trial using a biologic — a TNF inhibitor — for these women.

What has your research taught us about how Rho-kinase (ROCK) activation may contribute to SLE and giant cell arteritis?

Our laboratory has found that Rho-kinase activation can contribute to both SLE and giant cell arteritis by controlling the function of several cell types involved in the pathogenesis of these diseases. In particular, we have found that Rho-kinase can regulate the function of T cells, B cells and macrophages. Our investigation of patients with SLE and giant cell arteritis has furthermore shown that activity of these kinases is dysregulated in these patients, suggesting that these kinases are promising therapeutic targets for these diseases.

How might the translational potential of your ROCK work impact patient lives?

There are a number of inhibitors of these kinases that are being developed. Some are already in Phase I clinical trials and have demonstrated favorable safety profiles. Clinical trials with ROCK inhibitors in SLE are already being considered, suggesting that our findings can be translated into therapies in the very near future, thus rapidly impacting patient outcomes and quality of life.

Rho-kinase can regulate the function of T cells

Using clinical and biologic markers to risk-stratify pregnant patients with lupus

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fig. 2 CHROMATIN FIBER
A COMMITMENT TO EDUCATION

Achieving excellence in patient care begins with one critical factor: education. HSS’s approach to education is valued by our trainees and has nurtured exceptional rheumatologists. The highly academic atmosphere at HSS — one that cultivates curiosity and collaborations — has produced some of the most influential scientists and clinicians in the field of rheumatology, firmly cementing HSS’s position as one of the leaders in medical education.

Many HSS faculty hold positions of prominence on a national level, where their leadership helps influence and guide clinical training in rheumatology. Dr. Stephen Paget, for example, has created and continues to lead the first Academy of Rheumatology Medical Educators in the U.S., with the goal of providing funding for pilot studies in education research. His colleague, Dr. C. Ronald MacKenzie recently led the ACR Committee on Ethics and Conflict of Interest and is committed to incorporating ethical considerations into rheumatology practice and education.

Dr. Anne R. Bass is the incoming Chair of the ACR Committee on Training and Workforce Issues (COTW). The COTW is currently performing a rheumatology workforce survey that will be used, together with the contributions of the ACR board of directors, to address workforce gaps and workforce needs. Dr. Bass and her committee colleagues are responsible for developing educational and programmatic resources for rheumatology fellowship program directors, fellows, residents and medical students, such as the immunology/basic science curriculum that is currently under development.

Dr. Bass also leads HSS’s three-year rheumatology fellowship program, one that emphasizes not just excellent clinical training, but also research into the biological mechanisms behind autoimmunity, inflammation and musculoskeletal disease. During the second and third years of training, fellows pursue basic or translational laboratory-based or clinical research projects, and those conducting clinical research are encouraged to obtain a master’s degree in clinical epidemiology and health services research.

This integration of bench science with clinical training consistently produces rheumatologists with a profound appreciation and understanding of rheumatologic disease as well as outstanding clinical skills.

Both fellows and faculty benefit from our institution’s frequent, high-quality educational conferences and lectures, including Wednesday Grand Rounds, which draws some of the leading names in the field. HSS’s rich educational environment reveals new ideas; it facilitates sharing of experiences; it optimizes patient care. And it does so not just within the walls of its New York City campuses, but also for a far broader community thanks to the HSS eAcademy initiative, an ever-growing collection of online educational and academic programs enlightening patients and practitioners on the latest in scientific and clinical information.

Image Left (Histone Octamers):
Targeting “BET” proteins — which influence chromatin state in part by binding to acetylated histones — appears to suppress interferon responses and inhibit osteoclast differentiation, findings with relevance to treating SLE and suppressing pathological bone loss in arthritis.

As Chair of the ACR Committee on Training and Workforce, how will you and your colleagues work to influence the field of rheumatology for the better?

The COTW is devoted to the activities of program directors and to the development of the U.S. rheumatology workforce. We’ll be involved in developing curricula for fellows, residents and medical students. We’ve completed a rheumatology curriculum redesign that incorporates the 23 ACGME milestones and are in the process of developing an immunology and basic science curriculum for rheumatology fellows. The rheumatology workforce survey will give us important information about rheumatology practice patterns, including the use of ultrasound, workload and the use of physician extenders. With data from the survey, we hope to address workforce gaps, and make sure that going forward the rheumatology workforce matches society’s needs.

What stands out about the HSS rheumatology fellowship program?

The goal of our fellowship program is to create the academic leaders of tomorrow. We have a three-year program, while most fellowships are just two years. The first year is heavily clinical, and the fellows get tremendous exposure to a wide variety of complex rheumatic diseases in both the inpatient and outpatient settings. In years two and three all fellows do a research project and are expected to present their findings at the annual ACR meeting. We strongly encourage fellows to get advanced training in statistics and epidemiology through the Weill Cornell Clinical and Translational Science Center (CTSC) or the Division of Clinical Epidemiology and Evaluative Sciences Research. During year three we begin to focus on career development — addressing what comes afterward and how to advance in the field. Our fellows have been great at getting grant funding, and the majority of them end up with positions at academic medical centers.

What has your experience been like as an HSS fellow?

I have really enjoyed being a fellow at HSS. I’ve seen a tremendous diversity of clinical cases and been privileged to receive a world-class education from faculty who are experts in their fields and are incredibly approachable and invested in the education of fellows — whether it be in the clinic, on consult rounds or in research mentorship meetings.
Tell us a bit about your fellowship research project.

I’m evaluating PROMIS, a computer-based system for measuring patient-reported outcomes in lupus patients. The goal is to assess the feasibility of administering these surveys to patients at their outpatient visits and the validity of these surveys compared to gold standard quality-of-life/patient-reported outcome surveys. The project is important because lupus has a tremendous impact on quality of life, an outcome that cannot be measured by traditional physician-derived disease-activity instruments. My preliminary results have shown that the administration of PROMIS surveys is not only feasible in lupus patients — in that they are overwhelmingly willing and able to take the surveys both in the office and at home — but is also a welcome and validating experience for many.

What got you interested in exploring ethical issues in rheumatology?

My interest in medical ethics evolved from the time when I chaired the HSS Institutional Review Board, the committee whose charge is the approval of our clinical research from the standpoint of the protection of study subjects. While the committee’s activity is restricted to an examination of clinical research, my pursuits in the field of medical ethics gradually evolved to include a much broader array of considerations, some arising in clinical practice and others in the realm of medical professionalism. A subsequent appointment to the Ethics and Conflict of Interest Committee of the ACR, where I ultimately served as Committee Chair, afforded a unique point of vantage from which to observe and consider the ethical challenges facing those involved in current rheumatic disease care. Given the chronicity and complexity of the rheumatic diseases, a clinical domain in which ethical challenges abound, I was surprised to discover the scant attention directed toward them both in the public discourse of rheumatology and in the rheumatic disease literature.

As part of your work, you fielded a survey on ethical issues in the field. What did you find, and how might the result influence rheumatology education?

Our observation that there was a lack of consideration given to ethics in rheumatology culminated in a study of the ACR membership surveying the practicing community on their views on the ethical challenges arising in our field. This work has revealed many interesting insights and continues to serve as a stimulus for further research and education in this area, some of which is being conducted in conjunction with investigators abroad. It is my hope that these efforts will sensitize our practice and research community — and in particular our young physicians — to the ethical challenges confronting us as professionals and perhaps help shape the field going forward.
Chromatin Fiber, demonstrating histone octamers

**nucleosomes**

**RNA**

**DNA**

*histone octamers*
Patient Outcomes

Cutting-edge research and a commitment to outstanding clinical and scientific education make possible our ultimate goal at HSS: improving patient care and experiences in those suffering from rheumatologic disease, ultimately improving their lives. Clinical research and patient-focused initiatives at the institution continually challenge standards of care, going beyond accepted rheumatologic practice to ensure that patients achieve the best possible outcomes.

Dr. Vivian P. Bykerk, for example, aims to determine how a particular patient’s disease progresses over time and which patients will respond to currently available rheumatologic therapies. By gathering and analyzing certain patient findings and information, including laboratory tests and radiographs, the CATCH-US study hopes to provide clinicians with a better sense of which patients are likely to achieve persistent remission and which factors influence the likelihood of remitting. The findings could also help determine which patients can undergo medication withdrawal.

Patients with scleroderma are also benefiting from HSS’s world-class care. With the oversight of Drs. Jessica Gordon and Robert Spiera, the HSS Scleroderma Center is dedicated to patients suffering from this disabling and disfiguring malady. In line with HSS philosophy, the Center relies on a team approach, one rooted in close communication between rheumatologists and the other subspecialties involved in the care of scleroderma patients, as well as those systemic diseases that target the vasculature and muscles. Beyond patient care and counseling, the Center provides patient and physician education and leads a rich panel of clinical and translational research in the field, work that combines testing of novel therapies with collaborative studies on the biology responsible for the disease.

Finally, a key piece of HSS’s holistic healthcare philosophy is recognizing the importance of addressing social and personal issues that can arise with rheumatic disease. No other major rheumatology center in the country goes as far as we do in integrating social workers into patient care. Part of this focus involves recognizing disparities and cultural considerations that impact our patients. It also means offering telephone support to anybody, anywhere. Our lupus chat lines provide guidance to people across the U.S. and around the world.

No other major rheumatology center in the country goes as far as we do in integrating social workers.
Predicting arthroplasty outcomes

How might your work looking at arthroplasty outcomes in patients with rheumatologic disorders benefit patients?

At HSS, we are fortunate to have access to a large institutional registry that contains information on most patients undergoing arthroplasty. Since we collected baseline information on patients prior to surgery, and then again at two years, we were able to determine both the outcomes after surgery and what factors contribute to those outcomes. Our results demonstrated marked improvement in some areas. Patients with rheumatoid arthritis undergoing total knee arthroplasties, ankylosing spondylitis patients undergoing total hip arthroplasties, and SLE and psoriatic arthritis patients who had both procedures achieve improvements in pain and function two years after surgery that are as good as those achieved by patients with osteoarthritis. These results reassure patients bearing a diagnosis of inflammatory arthritis that joint replacement surgery is usually successful, resulting in significant improvement in their quality of life.

How will your future research help translate the biological understanding of RA into more effective therapies?

We have successfully developed a perioperative cohort for the study of RA flares, and are currently analyzing the post-op flare rates and characteristics. We will be following these patients for one year to understand the impact of disease activity on arthroplasty outcomes and ultimately to find targetable pathways that could lead to new therapeutics for RA patients and guide therapy. The “Perioperative Flare” study is a rich model, and the AMP collaboration has helped us to further develop our translational program, so we are very optimistic about eventual applicability to finding RA treatment targets.

What are the goals of the HSS Scleroderma, Vasculitis & Myositis Center?

The goals of the HSS Scleroderma, Vasculitis & Myositis Center are to provide world-class care for patients with systemic sclerosis (SSc), as well as those with other life-altering systemic diseases, to deliver patient and physician education and support, and to perform clinical and translational research. Dr. Robert Spiera and I take care of patients in our scleroderma clinic, where a team approach is utilized with excellent communication between the rheumatologists and the other subspecialties involved in the care of the individual patient.
How do initiatives at the Scleroderma, Vasculitis & Myositis Center benefit patients?

Our team works together on numerous projects that benefit patients with SSc. We’re involved in both single- and multicenter studies, often in collaboration with other clinicians and scientists at HSS, as well as those across the U.S. and internationally. We have a deep understanding of this disabling disease that helps improve patient lives, while also helping them understand a frequently confusing and frightening experience. We further strive to improve patient lives by working toward improved treatments for patients with SSc.

What stands out about the interaction between HSS Rheumatology and HSS Social Work?

HSS Social Work values a collaborative, evidence-based approach to our work. Our rheumatology physician partners and clinical staff are integral in shaping our department’s research agenda and initiatives. For the past 30 years, we have jointly published articles in peer-reviewed journals with the Rheumatology Division, as well as presented our program outcomes at various professional forums. These include the American College of Rheumatology Annual Scientific Meeting, the American Public Health Association and the American Society on Aging, adding to the professional body of knowledge as well as sharing our collaborative approach as a leading model in treating rheumatology patients.

How does HSS Social Work benefit patients on the national level?

We have three national peer support and education programs for people with lupus and their families: LupusLine®, Charla de Lupus (LupusChat)® and LANtern® (Lupus Asian Network). These programs are steeped in an integrative patient-centered care model that seeks to leverage evidence-based practice to enhance outcomes and overall quality of life for our patients and communities. These programs are bilingual and culturally tailored to respond to the unique needs of our population and to target specific gaps in care that can often lead to poor health outcomes. Overall, we have more rheumatology support and education programs than any hospital in the country. In 2014 alone, our programs reached over 23,000 patient contacts.

Social workers are a key part of patient care

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Goodman SM, Ramsden-Stein DN. Huang WT, Zhu R, Figgie MP, Alexiades MM, Mandl LA. Patients with rheumatoid arthritis are more likely to have pain and poor function after total hip replacements than patients with osteoarthritis. *J Rheumatol.* 2014 Sep;41(9):1774–80.


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The mission of Hospital for Special Surgery is to provide the highest-quality patient care; improve mobility; enhance the quality of life for all; and advance the science of orthopaedic surgery, rheumatology, and their related disciplines through research and education. With the largest group of rheumatologists in the country, HSS is a world leader in the research and treatment of rheumatic disease. Our Centers of Excellence are multidisciplinary and innovative programs, established by our expert faculty with the goal of improving the lives of patients with chronic musculoskeletal, autoimmune and inflammatory diseases. Rheumatologists at HSS see a high volume of patients as well as highly complex cases, which makes the level of care provided extraordinary and unique.
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Annual Report 2015

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