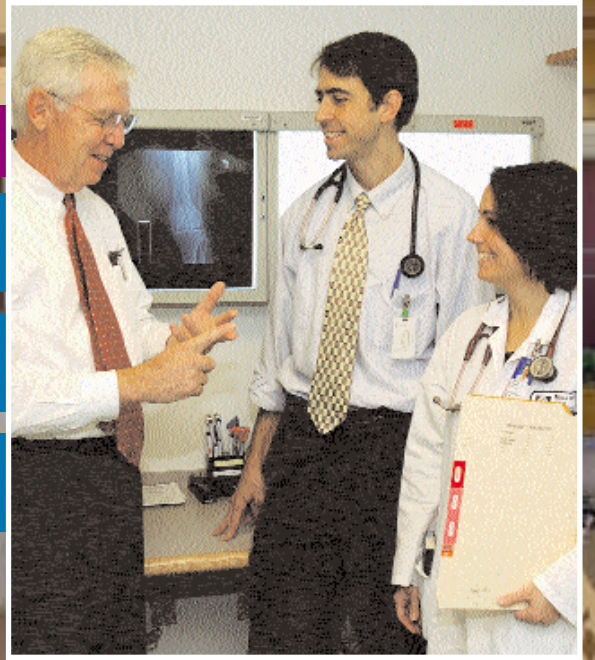


Brigham and Women's Hospital

CENTER FOR
ARTHRITIS AND
JOINT DISEASES



BRIGHAM AND
WOMEN'S HOSPITAL



HARVARD
MEDICAL SCHOOL
TEACHING AFFILIATE



BRIGHAM AND WOMEN'S HOSPITAL

Center for Arthritis and Joint Diseases

The Robert B. Brigham Hospital – a forerunner of today's Brigham and Women's Hospital – was founded in 1913 as the first hospital in the United States dedicated to the treatment of arthritis. The Center for Arthritis and Joint Diseases, of the Division of Rheumatology, Immunology and Allergy at Brigham and Women's Hospital, continues a long tradition as a comprehensive Center, combining activities in rheumatic disease clinical care, education, training and research as an integrated series of successful cutting-edge programs.

Clinical care is provided by more than 30 rheumatologists – who are all faculty members of Harvard Medical School – who see more than 25,000 visits annually, providing expertise in all areas of rheumatic disease. Our specialized centers of excellence for inflammatory conditions treat rheumatoid arthritis, systemic lupus erythematosus, vasculitis and myositis. We treat regional musculoskeletal problems and distinct patient populations in our Spine Center, Women's Musculoskeletal Center, and the Center for Skin and Related Musculoskeletal Diseases.

Comprehensive arthritis care is facilitated by the integration of ancillary services in bone and joint radiology, occupational and physical therapy, podiatry, and the location of these services with the rheumatology and orthopedic ambulatory practices. We work closely with our colleagues in orthopedics, physiatry, radiology, physical therapy, neurology, podiatry, dermatology, pain management specialists and other professionals.

Clinical research in such areas as new therapies for rheumatoid arthritis and outcomes and risk factor population studies on rheumatic disease patients has led to many key insights in understanding disease and in newly developed therapies. Our program in research, with an annual budget of more than \$16,000,000, occupies more than 30,000 square feet and includes nearly 50 faculty and more than 130 research investigators.



Brigham and Women's Hospital continues to be a world-class leader in the area of rheumatology. *U.S. News & World Report*® repeatedly names us among the top 10 hospitals in rheumatology.

Connecting You to Brigham and Women's Hospital

If you would like more information about the physicians of our Center for Arthritis and Joint Diseases, or to make a referral, please call our Referral Coordinator at **1-800-MD-TO-BWH**, Monday through Friday, 8 a.m. to 5 p.m., or e-mail esperandio@partners.org.



MICHAEL B. BRENNER, MD

*Chief, Division of Rheumatology, Immunology and Allergy,
Brigham and Women's Hospital*

Dr. Michael B. Brenner, the Theodore B. Bayles Professor of Medicine at Harvard Medical School, became Chief of the Division of Rheumatology, Immunology and Allergy in 1995. He is a rheumatologist, and senior physician and scientist, who has been at the helm of research in immunology and in rheumatoid arthritis. As a clinician-scientist his research program is making new strides in translational applications of basic immunology to the rheumatic diseases.

EXCELLENCE AND INNOVATION IN CLINICAL SERVICES

Therapeutics

Beginning with their clinical investigation of methotrexate, the therapeutics group has been in the forefront of efforts to evaluate new and novel therapies for rheumatoid arthritis. This group has taken a lead in evaluating drugs that might modify the course of rheumatoid arthritis – including methotrexate, cyclosporin A, leflunomide, combination therapies and the biologics including TNF inhibitors.



Nancy A. Shadick, MD, Co-director of the Rheumatoid Arthritis Registry; Jeffrey N. Katz, MD, MSc, Director of the Section of Clinical Sciences; and Elizabeth W. Karlson, MD, Director of Education in Rheumatic Disease Epidemiology.



*Bonnie L. Bermas, MD
Director, Women's
Musculoskeletal Center*

Women's Musculoskeletal Center

The Women's Musculoskeletal Center is dedicated to the evaluation and treatment of arthritic conditions in women. On-site laboratory, radiology, and physical therapy services are available to provide integrative services. The rheumatologists work closely with orthopedic surgeons to develop treatment plans and to expedite surgical intervention when necessary.

Center for Skin and Related Musculoskeletal Diseases

The Center provides coordinated care between the Department of Dermatology and the Division of Rheumatology, Immunology and Allergy. This comprehensive care involves the most advanced treatments for those illnesses that require multispecialty care, with rapid turnaround and diagnosis. The Center gives patients access to experts in both dermatology and rheumatology, with care managed simultaneously and a high level of coordination with dermatopathology.



MICHAEL E. WEINBLATT, MD

Co-director, Clinical Rheumatology and Associate Director, Center for Arthritis and Joint Diseases, Brigham and Women's Hospital
Dr. Michael E. Weinblatt, Co-director of Clinical Rheumatology and Associate Director of the Center for Arthritis and Joint Diseases, is a Professor of Medicine at Harvard Medical School. He has focused his clinical and research interests for over 20 years on rheumatoid arthritis and evaluating new treatments for the disease. Dr. Weinblatt leads a therapeutics group that has earned an international reputation. Dr. Weinblatt is co-editor of the textbook *Rheumatology 3rd Edition*, author of *The Arthritis Action Program*, and is a past president of the American College of Rheumatology. He is the recipient of the National Arthritis Foundation Virginia P. Engalitcheff Award for his work on methotrexate.

Spine Center

The Center provides multidisciplinary care with the physiatry pain service and interventional radiology, employing epidural steroids and vertebroplasty if needed. Orthopedics and neurosurgery services are readily available for innovative surgical solutions to difficult spine problems.

Juvenile Rheumatoid Arthritis Center

The Center provides continuity of care between pediatrics and adult rheumatology. Together, physicians work in cooperation with experts from Children's Hospital Boston and other pediatric hospitals regarding the most difficult cases.

PIONEERING RESEARCH

One of the greatest strengths of the Center for Arthritis and Joint Diseases is the integrated program of pre-clinical and clinical research focused on arthritis and related diseases. Over the past decade, research at the Brigham and Women's Hospital has led to significant advances in the understanding of the pathogenesis of immune-mediated inflammatory disease and in the management of rheumatoid arthritis.

Researchers within the Center for Arthritis and Joint Diseases are pursuing preclinical and clinical research in the following areas:

T-cell Biology

Investigators within the Center have discovered major pathways in antigen presentation and T-cell recognition, the transcription factors that allow T-cells to differentiate into T helper 1 vs T helper 2 cells, and inhibitory receptors that serve to dampen the inflammatory response. These discoveries have been used to improve our understanding of the cellular and molecular pathogenesis of rheumatoid arthritis and systemic lupus erythematosus.



*K. Frank Austen, MD,
Leader, Inflammation and Allergic Diseases Section*

Mast Cell Biology

For more than 30 years, researchers within the Center have been leaders in the study of mast cells. The recent demonstration that mast cells are critical components of inflammatory arthritis has allowed the development of animal models that will define the role of mast cells in immune-mediated inflammatory disease.



JONATHAN S. COBLYN, MD

*Director, Clinical Rheumatology,
Clinical Director, Center for Arthritis and Joint Diseases, Brigham and Women's Hospital*
As Director of Clinical Rheumatology and the Clinical Director for the Center for Arthritis and Joint Diseases, Dr. Jonathan S. Coblyn has overseen the development of the Center as it has expanded to provide comprehensive care for patients with rheumatic and immunologic diseases. Dr. Coblyn, an Associate Professor of Medicine at Harvard Medical School, has helped coordinate the Center to involve multiple disciplines in the care of patients including the integration of psychiatry, rehabilitation, and orthopedics, as well as the pain service and ancillary services. Dr. Coblyn has a national reputation as a clinician with a vast experience in the treatment of systemic rheumatic disease, especially rheumatoid arthritis.

Pathogenesis of Rheumatoid Arthritis

Studies have led to the development of new animal models of arthritis. This has allowed researchers within the Center to identify the specific immune cells and their secreted products that are responsible for inflammatory arthritis. These studies have revealed important interactions between T-cells, B-cells, macrophages, mast cells, neutrophils and synoviocytes that result in inflammatory arthritis.

They have also identified regulatory mechanisms that control the production of pro-inflammatory proteins as targets for the development of new drugs for patients with rheumatoid arthritis.

Rheumatoid Arthritis Registry

The Rheumatoid Arthritis Registry, under the direction of Dr. Michael E. Weinblatt and Dr. Nancy A. Shadick, will collect clinical data and patient samples from 1000 patients with rheumatoid arthritis for a comprehensive genetic analysis of this disease. Gene expression profiles will be used to identify new targets for drug development and to improve clinical management of patients with rheumatoid arthritis.

Lyme Disease

Research carried out in the Center has led to the development of an effective primary prevention program for the reduction of Lyme disease and other tick-borne illnesses on Martha's Vineyard, as well as studying a cohort of previously infected individuals from Nantucket Island to evaluate their long-term complications from the illness.

Quality of Care and Clinical Outcomes

A major focus of clinical research is to define optimal approaches to diagnosis and treatment of patients with rheumatoid arthritis, systemic lupus erythematosus, osteoarthritis, lumbar spinal stenosis and carpal tunnel syndrome. Researchers are working to understand the



*Paul J. Anderson, MD, PhD
Vice Chief, Division of Rheumatology,
Immunology, and Allergy*

impact of these diseases on work status and work functioning, and to identify the treatments that most efficiently improve the patient's functional status.

Clinical Epidemiology

Several researchers within the Center are studying modifiable risk factors – such as diet, psychosocial and environmental conditions – that influence the incidence and severity of rheumatoid arthritis, osteoarthritis and systemic lupus erythematosus. A major goal of this research is to understand the accelerated atherosclerosis observed in patients with systemic lupus erythematosus and rheumatoid arthritis.

FELLOWSHIP TRAINING

Since 1966, the training program in rheumatology, immunology and allergy and in the biomedical basis of rheumatic and immunologic diseases has trained 118 clinical fellows and more than 300 trainees, 70 of whom who have attained the rank of professor at leading medical schools and research centers around the world – it is regarded as one of the most successful academic rheumatology training programs in the United States.

The rheumatology fellowship program is an integrated program between Brigham and Women's Hospital and Beth Israel Deaconess Medical Center. Dr. Lloyd B. Klickstein now serves as Director of Education.

The basic laboratory research experience takes advantage of some of the most outstanding immunology and molecular biology laboratories at Harvard Medical School.

A clinical research training program in the Multipurpose Arthritis and Musculoskeletal Diseases Center includes epidemiology and outcomes training with the Harvard School of Public Health.

The Center for Arthritis and Joint Diseases is the primary site for clinical care and training and for clinical therapeutics. The ambulatory practices are among the largest and most diverse available and include clinical rotations at four major Harvard Medical School teaching hospitals.



Lloyd B. Klickstein, MD, PhD, Director of Education (right) with medical student Ehrin Armstrong



Ronald J. Anderson, MD, with fellows Peter Nigrovic, MD, and Alyssa Johnsen, MD

LEADERS IN CLINICAL RHEUMATOLOGY

AT BRIGHAM AND WOMEN'S HOSPITAL

Leading clinical rheumatologists of the Center for Arthritis and Joint Diseases at Brigham and Women's Hospital are on the faculty of Harvard Medical School, including:

Paul J. Anderson, MD, PhD, Associate Professor of Medicine at Harvard Medical School, serves as the Vice Chief of the Division of Rheumatology and directs a molecular laboratory on the mechanisms that regulate the production of the inflammatory mediators that cause arthritis.

Ronald J. Anderson, MD, Associate Professor of Medicine at Harvard Medical School, directed the clinical training program in rheumatology for more than 30 years and continues as a leading mentor and outstanding clinician.

K. Frank Austen, MD, Professor of Medicine at Harvard Medical School is leader of the Inflammation and Allergic Diseases Section of the Division. He has been a world leader in inflammation research, especially in the arachidonate pathway and mast cells.

Bonnie L. Bermas, MD, Assistant Professor of Medicine at Harvard Medical School, is director of the Women's Musculoskeletal Center.

Laurie H. Glimcher, MD, Professor of Medicine at Harvard Medical School, has led the program in gene expression including the genes that control Th1 and Th2 T cells.

Simon M. Helfgott, MD, CM, Assistant Professor of Medicine at Harvard Medical School, is co-director of the Spine Center and medical director of the Center for Arthritis and Joint Diseases satellite location at HealthSouth Braintree Rehabilitation Hospital in Braintree, Massachusetts. He is an expert in the areas of autoimmune disorders, back pain, inflammatory arthritis, polymyalgia, and vasculitis.

Jeffrey N. Katz, MD, MSc, Associate Professor of Medicine at Harvard Medical School, serves as director of the Section of Clinical Sciences, focusing in epidemiology and outcomes population science research.

Lloyd B. Klickstein, MD, PhD, Assistant Professor of Medicine at Harvard Medical School, serves as the director of the fellowship training program in the Division.

Matthew H. Liang, MD, MPH, Professor of Medicine at Harvard Medical School, developed one of the first Multipurpose Arthritis Centers in the United States. The research on epidemiology and outcomes in the rheumatic disorders now shapes current health care therapies and policies.

Diane J. Mathis, PhD, and **Christophe O. Benoist, MD, PhD**, Professors of Medicine at Harvard Medical School, are carrying out leading research in the development of animal models of arthritis and their mechanisms.



Peter H. Schur, MD, Professor of Medicine at Harvard Medical School, has shown a life long interest in the diagnosis, management and mechanisms of systemic lupus erythematosus that has helped to advance the medical treatment of this difficult condition.

Nancy A. Shadick, MD, Assistant Professor of Medicine at Harvard Medical School, is co-director of the Rheumatoid Arthritis Registry and is a pioneer in the study of Lyme disease.

FACULTY MEMBERS

Paul J. Anderson, MD, PhD
Ronald J. Anderson, MD
Jonathan Arm, MD
K. Frank Austen, MD
Peter E. Barry, MD
Samuel Behar, MD, PhD
Bonnie L. Bermas, MD
Joshua A. Boyce, MD
Michael B. Brenner, MD
Jack F. Bukowski, MD
Mariana Castells, MD, PhD
Jonathan S. Coblyn, MD
John J. Costa, MD
Hiranmoy Das, PhD
Christopher Dascher, PhD
William P. Docken, MD
Lawrence Du Buske, MD
Patricia A. Fraser, MD
Daniel S. Friend, MD
Hui-Xian Gan, MD
Laurie H. Glimcher, MD
Jerry M. Greene, MD
Michael J. Grusby, PhD
Michael F. Gurish, Ph.D.
Arthur Hall, MD
Simon M. Helfgott, MD
Jonathan Higgins, PhD
I-Cheng Ho, MD
Richard F. Horan, MD

Victor Hsu, MD
Donald Humphries, PhD
M. Elaine Husni, MD, M.H
Zacharia Isaac, MD
Jean M. Jackson, MD
Yoshihide Kanaoka, MD, PhD
Elizabeth W. Karlson, MD
Howard R. Katz, PhD
Jeffrey N. Katz, MD, MSc
Lloyd B. Klickstein, MD, PhD
Bing K. Lam, PhD
David M. Lee, MD, PhD
David Leslie, MD
Matthew H. Liang, MD, MPH
Elinor A. Mody, MD
D. Branch Moody, MD
Kristine Phillips, MD, PhD
Theresa Podrebarac, MD
Heinz G. Remold, MD, PhD
Robert Sands, MD
Peter H. Schur, MD
Pascale Schwab, MD
Nancy A. Shadick, MD
Albert L. Sheffer, MD
Daniel H. Solomon, MD
Jocelyn Spragg, PhD
Richard L. Stevens, PhD
Stephen Wax, MD, PhD
Michael E. Weinblatt, MD



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Center for Arthritis and Joint Diseases
Brigham and Women's Hospital
45 Francis Street
Boston, MA 02115
1-800-MD-TO-BWH
www.brighamandwomens.org

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