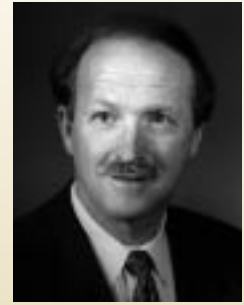




BRIGHAM AND WOMEN'S HOSPITAL

THOMAS S. THORNHILL, MD



This past year has been memorable in many ways. The sentinel events of September 11th, 2001 have greatly influenced each of us, with perhaps the only positive aspect being a renewed perspective about life, country and priorities. Unfortunately, the Partners Trauma program and hospital disaster preparedness teams were not able to assist due to the extremely high fatality/injury ratio.

The Healthcare Industry in the United States in general and academic medical centers in particular continues to be adversely influenced by healthcare reform. As stewards of your Harvard Combined Orthopaedic Residency Program, I can assure you the Program is continuing its tradition of excellence. Healthcare economics in Massachusetts, however, makes it difficult to both recruit and retain new faculty members and to be able to fund essential programs in the residency. The support that many of you have provided has been invaluable and much appreciated. I know that certain parts of our country have a malpractice crisis and that regionally each of you has issues so I will not elaborate on ours but rather update you on what we have been doing at the Brigham and Women's Hospital.

NEW FACULTY

A series of new recruits over the past few years has strengthened our program and brings new dimensions to what traditionally had been thought of as a joint arthroplasty unit. Specific new recruits include Drs. Peter Millett, Phil Blazar, Wolfgang Fitz, Chris Chiodo and James Ioli.

Dr. Peter Millett has joined the Partners Shoulder Services along with Dr. J.P. Warner and has rapidly assimilated into our Department. Peter was trained at Hospital for Special Surgery and completed a fellowship with Steadman Hawkins in Colorado. He was highly praised by attendings at both places and Peter has proved them to be correct.

Dr. Phil Blazar was recruited after an extensive national search to join our Hand and Upper Extremity Department. Phil works with Drs. Barry Simmons and Mark Koris to provide for us an expanded program at the Brigham, Faulkner and Newton Wellesley Hospital. His major research interests have been in wrist biomechanics and he brings an additional and much appreciated sophistication in medical ethics.



Dr. Phil Blazar

Dr. Wolfgang Fitz joined our staff after having spent a year as a clinical fellow and a second year as a research fellow in the department. Wolfgang was a practicing orthopaedic surgeon in Germany and his career to date has been marked with many innovations. While in Germany he designed a seat that is widely used by BMW. Since his arrival at the Brigham he has been part of several patented innovations through our technology office involving nanotechnology as well as development of new biomaterials. Wolfgang was selected as one of the John Insall Traveling Fellows for 2002. This will be the inaugural year of this fellowship in John's memory. It was highly sought after and is destined to be on the par of the ABC Traveling Fellowship Program. Wolfgang's clinical interests are in adult reconstructive surgery, particularly on the revision side, and he has given a boost to an already large program in that arena.



Dr. Wolfgang Fitz

Dr. Chris Chiodo came back to us two years ago after finishing his Chief Residency at the Brigham and completing a Foot and Ankle Fellowship in Baltimore with Dr. Mark Myerson. Dr. James Ioli was recruited to be Chief of the Podiatric Division of our Foot and Ankle Program. Jim had a successful practice on the South Shore and I have worked with him for years at Braintree Hospital. Jim is an experienced podiatrist who brings from private practice a wealth of clinical acumen. He is currently on the Board of Directors of the American College of Podiatric Surgeons and Vice President of the Massachusetts Podiatric Medical Society. The addition of Jim and Chris to the Foot and Ankle Service headed by Dr. Mike Wilson gives us one of the premier programs from a clinical and academic point of view. The Foot and Ankle Service is centered at the Faulkner Hospital



Dr. Chris Chiodo



Dr. James Ioli

and is a cornerstone of our program at that institution.

The Faulkner Hospital continues to play a major role in our program. We performed about 1400 surgical procedures at the Faulkner last year, mostly on the outpatient side, and we are currently working with the Faulkner and the Orthopaedic group at the Faulkner headed by Dr. Joseph Barr in order to expand the inpatient services.

CLINICAL PROGRAMS

There have not been many other major changes in the clinical program over the past year. The Adult Reconstructive Service continues to be well represented at the Academy and sub-specialty days. We have been fortunate to have another group of excellent fellows, both nationally and internationally. This year's Adult Reconstructive fellows are Drs. Paul King from the University of Pennsylvania, Gary Matthys from Baylor, and Jeff Wiley from Dartmouth. Dr. Mark Metzger from Oregon Health Sciences University, a fellow from last year, stayed to complete additional training in spine and musculoskeletal oncology. Mark is leaving to enter practice in Portland, Oregon. Dr. Jeff Headrick from the U.S. Navy came back to spend some more time with Tom Minas in the Cartilage Repair Center. The International fellows this past year include Drs. Kyoung-Ho Yoon from Korea, Michael Badulescu from Zurich, Nicolas Riand from Geneva, Shay Zayontz from Australia, Peter Walker from Australia, Karl-Heinz Widmer from Switzerland, and Richard Carrington from the U.K. If any of you are looking for new associates either in a private practice or academic setting, please let us know early in the cycle so that we can assist.

The Sports Service is centered at 850 Boylston Street and continues to grow. There is crossover between the Sports Service, the Partners Shoulder Service, the Cartilage Repair Service and the Foot and Ankle Service. The Sports Medicine Fellowship has become a reality, and we think that the breadth of this program, the variety of techniques employed, the emphasis on both lower and upper extremity, as well as the research opportunities in this arena will make this new fellowship very competitive.

The Hand/Upper Extremity Program continues to support one of the premier fellowships in the country. This year's fellows are testimony to that excellence. They are Simon Cornelissen from Yale University and Peter Pardubsky from the University of Iowa. The balanced Hand, Elbow and Shoulder experience coupled with an excellent Pediatric program run by Dr. Peter Waters at Childrens Hospital makes it unique compared with other programs. There is certainly enough shoulder work between Drs. Millett, Koris, S. Martin, Simmons and myself to provide a well-rounded experience both for the Hand fellows and the Partners shoulder fellow.

Lead by Dr. Michael Wilson, the Foot and Ankle Service at Brigham and Women's and Faulkner hospitals continues to grow in size, clinical volume, and academic productivity. Over the last two years, the Service has been joined by Dr. James Ioli and Dr. Christopher Chiodo. Clinically, the Foot and Ankle Center grows busier by the month. Nearly 200 patients are

now seen on a weekly basis at the Center, which is located at the Faulkner Hospital. A cast technician is on site and Podiatry services will soon be expanded with the addition of a second podiatrist. Despite the increased clinical volume, teaching remains a constant focus of the Service. The weekly Indications Conference continues to upgrade the resident learning experience. Plans are now in the works for a Foot and Ankle syllabus and an electronic compilation of core research articles. With community funding, the fellowship continues to train young Foot and Ankle sub-specialists and will soon be expanded to a one-year position.

The Spine program headed by Drs. Richard Ozuna and Greg Brick is actively recruiting a third fulltime member and has participated in the recruitment of a Physiatrist to head our Musculoskeletal Non-operative Spine Program. This is in conjunction with our Musculoskeletal Center and our new recruit will be beginning in September 2002.

The Partners Trauma Service at the Brigham under the leadership of Dr. Mark Vrahas has truly integrated throughout the Partners Network. It has enhanced our trauma care, residency teaching and academic productivity. This next year will be a big transition as the chief residency will stop and all trauma will integrate into the Trauma Program. We are actively recruiting a new traumatologist who will work with Mark and Malcolm Smith to handle this expanding patient population.

Our most unique program is the Cartilage Repair Center (CRC) headed by Dr. Tom Minas. Tom has gained an international reputation as a leader in a variety of techniques of cartilage repair including autologous chondrocyte implantation, other marrow derived and cell based therapies, mosaicplasty, and osteotomy. The recruitment of Dr. Philip Lang from Stanford University to head our Musculoskeletal Imaging Department has provided a great boost to the CRC as Phil's interest in cartilage imaging techniques complement those of Dr. Carl Winalski to give us one of the premier musculoskeletal imaging centers in the country. We have dovetailed the fellowship experience in the CRC with the Adult Reconstructive Fellowship so that each of our fellows gets an experience in this area.

The good health of our clinical programs was codified a few months ago when *Boston Magazine* named their "top doctors" in adult orthopaedics and in sports medicine. Seven of the 11 named were from the Brigham and Women's Hospital and included Drs. Greg Brick, Charlie Brown, Scott Martin, Tamara Martin, John Ready, Richard Scott and, for some inexplicable reason, me.

RESEARCH PROGRAM

Our Musculoskeletal Research Program has expanded in many ways. The Association of Orthopedics, Rheumatology, Radiology and Endocrinology in the Brigham and Women's Hospital Orthopaedics and Arthritis Center has stimulated interdepartmental and translational research efforts. At our recent Spring Research Retreat, we concentrated on 3 specific areas. First, Diane Mathis, Ph.D. who directs the section on

Immunology and Immunogenetics at Joslin Diabetes Center and David Lee, M.D, Ph.D. who is a Research Fellow in Rheumatology spoke on the molecular mechanisms of synovitis and presented their data on a murine model for inflammatory arthritis and the role of mast cells in inflammation. Steven Ghivizzani, Ph.D., of our Center for Molecular Orthopaedics presented a review of his work with Chris Evans, Ph.D. and others on the development of a gene based therapy for arthritis. Finally, Phillip Lang, M.D.MBA, the Director of our Musculoskeletal Radiology Service, and Jeffrey Duryea, Ph.D. of the Radiology Department gave us an update of new MRI and computerized methods to evaluate cartilage both in degeneration and repair.

Within the Department of Orthopaedics I am pleased to report that things are very sound. Dr. Myron Spector was recently awarded the Clemson Award for applied biomaterials research. It is the highest award given in the category given by the Society for Biomaterials.

The Skeletal Biology Laboratory, directed by Julie Glowacki, Ph.D., is focussed on the mechanisms of human skeletal aging and on innovative methods for tissue repair and regeneration. The group is supported by competitive grants awarded by the NIH, the Department of Defense, and several Foundations. In 2001, there were 11 peer-reviewed original research articles. In August, 2001, Dr. Glowacki's continuous service to tissue banking was recognized when the American Association of Tissue Banks presented her with the George W. Hyatt Memorial Award, "to acknowledge the importance of her research in elucidating bone-healing mechanisms and the means by which demineralized bone initiates cartilage formation".

Sonya Shortkroff, Ph.D. is continuing her investigations on the biocompatibility of nano-structured biomaterials and particulates and recently presented some of this work at the Materials Research Society Meeting. In addition, she continues her collaboration with the Department of Radiology as co-investigator for an NIH SBIR that involves the use of novel MRI contrast agents for detection of early changes in osteoarthritic cartilage. Results of this work will be presented at the ICRS Meeting in June. She has published three papers this year and served on the BWH Research Council Sub-Committee for Career Development as well as acting as the Safety Officer for the BWH Orthopedic Research Lab.

Mark Brezinski MD Ph.D. has continued his work on high resolution imaging of cartilage, in particular Optical Coherence Tomography (OCT). Mark works closely with Dr. Scott Martin, who provides the clinical aspects of this work. OCT is a new method of high-resolution imaging, analogous to ultrasound but using infrared light rather than sound. This year, he has received three new NIH R01 grants and a Lilly grant for this work. He has had committee memberships on the central Osteoarthritis Initiative, NIH Bioengineering, and NSF bioengineering committees. Invited talks range from International Society for Cartilage Repair (Toronto) to the Workshop on Optical Technologies (Saratov, Russia). Published, accepted, submitted, or in-progress papers include the early diagnosis

of osteoarthritis (collagen disorganization) with polarization sensitive OCT, in vivo human OCT imaging, absorption spectroscopy to assess cartilage water content, the assessment of ligaments and tendons with polarization sensitive OCT, guiding nerve and vessel repair after traumatic injury, and the use of OCT elastography to assess the mechanical properties of tissue.

The Center for Molecular Orthopaedics continues to work on projects related to gene therapy; a new initiative involving gene therapy for osteoarthritis has begun as a multidisciplinary approach headed by Dr. Chris Evans. Within the laboratory, Steve Ghivizzani has been working on methods to study and prolong persistence of transgene expression following gene delivery to joint tissues. He has also initiated a variety of research projects involving direct gene delivery for the purpose of cartilage repair. He was able to obtain funding in 2001 as a PI for an R03 proposal from NIH and was an invited speaker and panelist at several meetings including the BECON 2001- Symposium on Reparative Medicine and the NIH and The Glaucoma Foundation Eighth Annual Think Tank in New York. He authored or co-authored 4 research articles and 5 reviews.

Martha Murray, MD has continued her work on stimulation of soft tissue repair, specifically focusing on enhanced repair of the anterior cruciate ligament. This year, she was awarded a medical research grant from the National Football League (did not include Superbowl tickets). She received the Cabaud Research Award from the AOSSM at their annual meeting in Keystone, Colorado. She had two papers accepted for publication and presented abstracts at several meetings, including the Orthopaedic Trauma Association, AOSSM, ORS and the Academy meeting, as well as co-authoring three chapters and serving on the editorial board for the Academy's new textbook for medical students, *Musculoskeletal Medicine*. Martha is currently on maternity leave after the birth of her son, Joe. Martha and Joe are both doing well, and we look forward to her return. Martha will complete a pediatric clinical fellowship to complement her adult and adolescent work and will be centered in the Longwood Medical area.

The Foot and Ankle Service has also been productive with regard to research this year. At the Annual Meeting of the American Academy of Orthopedic Surgeons in Dallas, the Foot and Ankle Service presented three papers. Dr. Domingo Cheleuitte presented research he conducted with Dr. Michael Wilson on the use of flexor hallucis longus transfer for chronic Achilles tendon disorders. Dr. Dov Kolker also presented research that he conducted with Dr. Wilson. This series of 21 patients who underwent autologous osteochondral grafting of the talar dome is one of the largest in the country and demonstrated excellent clinical results using mosaicplasty for osteochondral lesions of the talus. Finally, Dr. Chiodo presented a paper on the Ludloff osteotomy for adult hallux valgus. The Ludloff osteotomy is an oblique osteotomy of the first metatarsal that is biomechanically superior to the proximal crescentic osteotomy. In the presented series of

73 patients, an overall success rate of 93% was reported. Upcoming presentations include papers accepted to the Annual Summer Meeting of the American Orthopaedic Foot and Ankle Society in Michigan (Dr. Wilson) and to the SICOT/SIROT World Congress in San Diego (Dr. Chiodo). Ongoing research includes such projects as a clinical review of first metatarsophalangeal fusions, an intermediate follow-up study of isolated hindfoot fusions, and a long-term follow-up study of the modified Brostrom procedure. The Foot and Ankle Service will also be working with the Brigham Radiology Department to study survival of ankle allografts and additionally has received a research grant to prospectively study the use of COX-2 inhibitors in patients undergoing ambulatory foot and ankle procedures.

The Nanotechnology Group of Anuje Bellare, Ph.D., Wolfgang Fitz, M.D., Andreas Gomoll, M.D. Richard Scott, M.D., and yours truly presented at the Academy/ORS for the past 2 years on exciting new work in enhancing the strength of cement. Additionally, studies on wear of a variety of materials have been another major focus in the lab. We will be sorry to see Marybeth Turrell, a stalwart in the lab, leaving to enter Yale Medical School in the fall.

PHYSICAL PLANT

The physical plant at the Brigham is changing. We anticipate a building campaign that will move Musculoskeletal, the Neurosciences and Radiology into a new structure. In the meantime we have recently renovated the Lowell Library and expanded the residents and fellows offices to incorporate a learning center. We would love to have copies of any books, CDs, videos and any other electronic media that our alumni have done or wish to donate. Moreover, we refurbished the Department and are looking for any suitable photographs that you might have that will show the rich traditions of Orthopaedics here in Boston. While this is an eleemosynary endeavor, our development office can recognize any gifts for tax purposes. This new area will be the focal point for educational programs for residents, fellows and students.

Our clinical program, while still housed at the BWH, has expanded to Faulkner Hospital, 850 Boylston Street in Chestnut Hill, the Surgicenter in Brookline, Braintree Hospital and the Newton Wellesley Hospital.



Dr. Robert Poss and Dr. Thomas S. Thornhill

ALUMNI NEWS

I am happy to report that we recently celebrated the retirement of Dr. Robert Poss and his transition to the Journal of Bone and Joint Surgery. It was a wonderful evening and the outstanding attendance was a tribute Bob's many years of contribution to the Brigham and Women's Hospital and the Harvard Residency program. It was great to see Clem Sledge, Bill Thomas, and Fred Ewald return for the event. Bob continues to be very active in his new role at the JBJS and is a regular attendee at Grand Rounds. It was an exciting evening and a great opportunity for our new colleagues to meet the people who built this program.

It was great to see many of you at the Academy Alumni event and I look forward to seeing you at next years Academy or sooner.

Department of Orthopaedic Surgery, Brigham and Women's Hospital

Thomas S. Thornhill, MD

John B. and Buckminster Brown Professor of Orthopaedic Surgery, Harvard Medical School

Orthopaedist-in-Chief, Department of Orthopaedic Surgery, Brigham and Women's Hospital

President-elect, The Knee Society

Board of Trustees; Brigham and Women's Hospital, BWH/Faulkner, Arthritis Foundation

Clinical Faculty

Robert Poss, MD

Professor of Orthopaedic Surgery, Harvard Medical School

Vice-Chairman, Department of Orthopedic Surgery, Brigham and Women's Hospital

Director, American Board of Orthopaedic Surgery

Richard Scott, MD

Professor of Orthopaedic Surgery, Harvard Medical School
Past-President, The Knee Society

Barry P. Simmons, MD

Associate Clinical Professor of Orthopaedic Surgery, Harvard Medical School

Director, Hand and Upper Extremity Service

President, Musculoskeletal Education and Research Institute

Gregory W. Brick, MD

Assistant Clinical Professor of Orthopaedic (1985-1996) Surgery, Harvard Medical School

Board of Trustees, Brigham Orthopaedic Foundation

Charles H. Brown, Jr., MD

Clinical Instructor in Orthopaedic Surgery, Harvard Medical School

Director, Sports Medicine Service

Daniel M. Estok, II., MD

Instructor in Orthopaedic Surgery, Harvard Medical School

James H. Herndon MD, MBA

Chairman, Partners Department of Orthopaedics
Partners Healthcare Professor of Orthopedic Surgery, Harvard Medical School

Jon J.P. Warner, MD

Chief, Shoulder Service
Associate Professor of Orthopedic Surgery, Harvard Medical School

Mark J. Koris, MD

Clinical Instructor in Orthopaedic Surgery, Harvard Medical School

Scott D. Martin, MD

Instructor in Orthopaedic Surgery, Harvard Medical School

Team Physician: The New England Revolution, Bridgewater College, Wellesley College, and Wheelock College

Tamara L. Martin, MD

Instructor in Orthopaedic Surgery, Harvard Medical School

Team Physician: Women's World Cup, Wellesley College, Wheelock College and Bridgewater College

Tom Minas, MD

Associate Professor of Orthopaedic Surgery, Harvard Medical School

Richard M. Ozuna, MD

Instructor in Orthopaedic Surgery, Harvard Medical School
Director, Spine Service

John E. Ready, MD

Instructor in Orthopaedic Surgery, Harvard Medical School

Director, Tumor Service

Michael G. Wilson, MD

Assistant Professor in Orthopaedic Surgery, Harvard Medical School

Director, Brigham Orthopaedic Department, Faulkner Hospital

Director, Foot and Ankle Service

R. John Wright, MD

Clinical Instructor in Orthopaedic Surgery, Harvard Medical School

Resident Coordinator, Brigham and Women's Hospital

Director, Orthopaedic Trauma Service
Clinical Faculty-Harvard Vanguard Medical Associates

Robert Chernack, MD

Clinical Instructor in Orthopaedic Surgery, Harvard Medical School

John A.K. Davies, MD

Clinical Instructor in Orthopaedic Surgery, Harvard Medical School

Jerry L. Knirk, MD

Clinical Instructor in Orthopaedic Surgery, Harvard Medical School

Robert E. Miegel, MD

Clinical Instructor in Orthopaedic Surgery, Harvard Medical School

Mark E. Steiner, MD

Clinical Instructor in Orthopaedic Surgery, Harvard Medical School

Craig R. Stirrat, MD

Clinical Instructor in Orthopaedic Surgery, Harvard Medical School

Wolfgang Fitz, MD

Instructor in Orthopaedic Surgery, Harvard Medical School

Chris Chiodo, MD

Instructor in Orthopaedic Surgery, Harvard Medical School

James P. Ioli, MD

Instructor in Orthopaedic Surgery
Chief of Podiatry

Phil Blazar, MD

Instructor in Orthopaedic Surgery, Harvard Medical School

Peter Millett, MD

Instructor in Orthopaedic Surgery, Harvard Medical School

R. Malcolm Smith, MD

Assistant Professor of Orthopaedic Surgery, Harvard Medical School

Associate Chief, Partners Orthopaedic Trauma Services

Mark Vrahas, MD

Assistant Professor of Orthopaedic Surgery, Harvard Medical School

Chief, Partners Orthopaedic Trauma Services

Fellows

Hand

Simon Cornelissen, MD
Peter Pardubsky, MD

Arthroplasty

Sonu Ahluwalia, MD
Paul King, MD
Gary Matthys, MD
Jeff Wiley, MD

Spine and Musculoskeletal Oncology

Mark Metzger, MD

Foot & Ankle

Lars Richardson, MD
David Gazzaniga, MD

Basic Science Faculty

Myron Spector, PhD

Professor of Orthopedic Surgery, Harvard Medical School

Director, Orthopedic Research Laboratory, Brigham and Women's Hospital

Julie Glowacki, PhD

Associate Professor of Orthopedic Surgery, Harvard Medical School

Co-editor, The Aging Skeleton - Academic Press

Election to the American Society for Bone and Mineral Research Council

Hu-Ping Hsu, MD

Instructor in Orthopedic Surgery, Harvard Medical School

Biomechanical changes in the animal model of total joint arthroplasty

Schuichi Mizuno, PhD

Instructor in Orthopedic Surgery, Harvard Medical School

Cartilage regeneration and mechanical signal transduction

Anuj Bellare, PhD

Research Fellow in Orthopedic Surgery, Harvard Medical School

Polyethylene wear

Sonya Shortkroff, MD

Instructor in Orthopedic Surgery, Harvard Medical School

Biochemistry/Cell Culture