

# A Century of Orthopaedics at UHCMC

At 102 years old, the Department of Orthopaedics at University Hospitals Case Medical Center (UHCMC) is one of the oldest in the nation. To say it has a longstanding tradition of excellence would be an understatement, according to Randall E. Marcus, MD. Dr. Marcus has been an integral part of the Department of Orthopaedics at UHCMC since 1981. He has been its chairman since 2002 and is also the Charles H. Herndon professor and chairman of the Department of Orthopaedics at Case Western Reserve University (CWRU).

“UHCMC was way ahead of the profession when it established its Orthopaedics Division in 1907. There wasn’t an American Academy of Orthopaedic Surgeons until 1933, and there wasn’t an American Board of Orthopaedic Surgery until 1934,” he said. “It’s a fantastic tradition of excellence in patient care, research and education, and my job is to make sure that tradition is maintained and continued.”

By all accounts, it has been. Ranked by *U.S. News & World Report* as one of the top orthopaedic programs in the United States for the past decade, UHCMC features fellowship-trained orthopaedic surgeons, each with expertise in a specific subspecialty, including total joint reconstruction, spine, musculoskeletal oncology, foot and ankle, hand and upper extremity, pediatric orthopaedics, shoulder and elbow, sports medicine, and trauma. In addition, all are full-time faculty members at Case Western Reserve University School of Medicine, where they participate not only in teaching but also in research.

“Education and research are exciting facets of what we do. We’re really on the cutting-edge, trying to find new and better ways to help patients,” said Dr. Marcus, who pointed out that for the past 20 years, the orthopaedic department at CWRU has been one of the top 10 for NIH (National

Institutes of Health) research funding. “The work that’s done in our laboratories has helped orthopaedic surgeons around the world — not only technically, but also in the development of new devices to reconstruct joints, fix broken bones and care for congenital and development problems in children and adults.”

**Randall E. Marcus, MD, is chairman of the Department of Orthopaedics at UHCMC and the Charles H. Herndon professor and chairman of the Department of Orthopaedics at Case Western Reserve University.**



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**The Department of Orthopaedics at UHMC offers a broad spectrum of surgical and non-surgical treatments for patients of all ages with minor to major musculoskeletal problems resulting from trauma, infection, inflammation, arthritis, tumors and deformity.**

## SUBSPECIALTY CARE

Thirty-two orthopaedic surgeons, two medical sports medicine specialists and twelve scientists comprise the Orthopaedic Department at CWRU. Together, they offer a broad spectrum of surgical and non-surgical treatments for patients of all ages with minor to major musculoskeletal problems resulting from trauma, infection, inflammation, arthritis, tumors and deformity.

“All of our surgeons were recruited from the very top medical centers. All are board-certified by the American Board of Orthopaedic Surgery and have certificates of added qualifications in their subspecialty areas of interest. And all concentrate on their specific area, rather than doing general orthopaedics, because it is well known — and research supports this — that surgeons that concentrate in a specific area provide the best outcomes for patients with the lowest complication rate,” said Dr. Marcus.

Six physicians subspecialize in joint replacement surgery at UHMC, where more than 700 total joint replacement surgeries are performed each year. In addition to Dr. Marcus, they include Drs. Victor M. Goldberg, Richard Grant, Matthew Kraay, William J. Petersilge, and Roger G. Wilber. Described by

Dr. Marcus as “second to none,” these surgeons have helped to design implants that are used throughout the world.

In UHMC’s bone tumor section, headed by Dr. Patrick Getty, clinicians work in conjunction with the Ireland Cancer Center to provide total treatment and therapy for children and adults with bone tumors. Dr. Getty is also working on cutting edge research with Dr. Ed Greenfield, one of the CWRU scientists studying the molecular biology of tumors, in an attempt to develop newer and even better treatments.

At UH Rainbow Babies & Children’s Hospital, pediatric orthopaedic surgeons are also making outstanding contributions. A prime example is Dr. George Thompson, who edits the *Journal of Pediatric Orthopaedics* and recently won the Arthur H. Heune Memorial Award “for excellence and promise” at the 2008 Pediatric Orthopaedic Society of North America meeting.

“Some of the very first pediatric orthopaedic surgeons in the United States were associated with Case Western Reserve and Rainbow Babies & Children’s Hospital,” said Dr. Marcus. “We have a tradition going back 100 years of innovative treatments for children with both spinal and extremity deformities, and we’re very proud of that.”

He praises Dr. Henry H. Bohlman, who heads the spine center at UHMC and was recently awarded the Nicolas Andry Lifetime Achievement Award from the Association of Bone and Joint Surgeons, and his colleagues Drs. Christopher Furey and Nicholas Ahn. According to Dr. Marcus, these surgeons have revolutionized the anterior approach to spine surgery to correct developmental problems, such as spinal stenosis, and have developed techniques that are now used worldwide for the treatment of these conditions.

Dr. Marcus is also proud of the professional involvement of the surgeons in his department, which is represented on the editorial boards of every major orthopaedic publication, including *The Journal of Bone and Joint Surgery*, *Clinical Orthopaedics and Related Research*, and *Spine*. UHMC’s orthopaedic surgeons also have been elected to leadership roles in all of the major orthopaedic organizations, including the American Board of Orthopaedic Surgery, American Academy of Orthopaedic Surgeons, Pediatric Orthopaedic Society of North America, American Orthopaedic Rehabilitation Association, Orthopaedic Research and Education Foundation, and the AO Trauma Foundation North America.

Ultimately, all of this professional involvement has one clear

goal: better treatments for patients. Towards that end, the orthopaedic surgeons work as a team with specialists from rheumatology, neurology, neurosurgery and radiology to provide optimal patient care. Moreover, specialized nurses, physical therapists, occupational therapists, and social workers also collaborate to ensure each patient's recovery and rehabilitation is easier and faster.

"If you're going to be an orthopaedic surgeon, you need to be a team player," Dr. Marcus stressed. "As talented a surgeon as one may be, without an outstanding team that works with you, you're not going to be able to provide the real excellence of care that you would want for your patient."

## RESEARCH AND EDUCATION

Teamwork also means that members of the department collaborate on the latest research and technological advances.

"One of the main reasons we've been so successful in research is we've linked our clinicians over the years with our scientists," said Dr. Marcus. "Our clinicians often know what the problems are that need to be solved to improve treatments for patients, while our scientists have the scientific skills to help us solve these problems. So by working together and building teams of scientists and clinicians . . . that's been one of the main reasons for our success in not only achieving breakthroughs in patient care but also in getting federal funding for research."

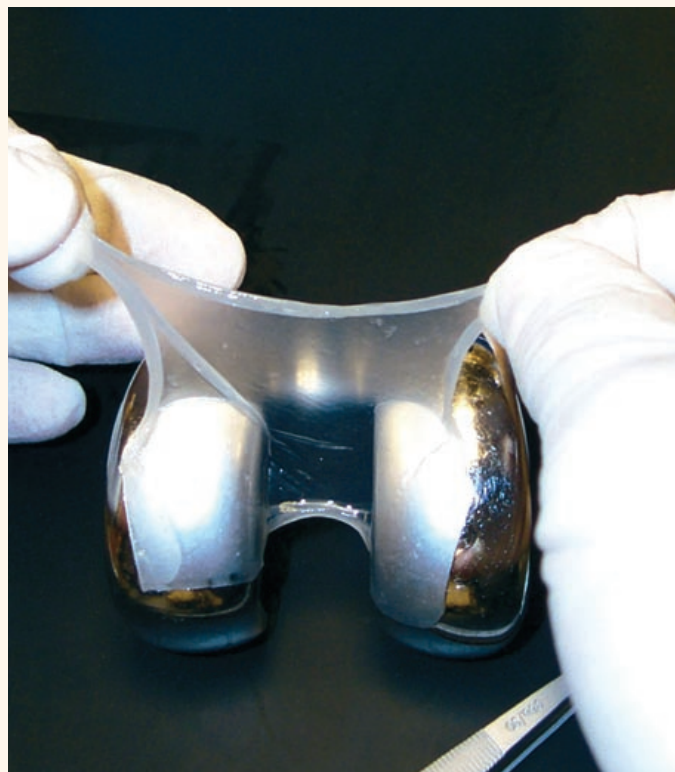
Currently, the department's researchers are working on cartilage and bone-cell molecular biology, tissue engineering, biomechanics, and functional electrical stimulation. These researchers are considered to be world-class scientists. In fact, CWRU's orthopaedic department has been ranked #1 in NIH funding 6 times in the past 10 years among all orthopaedic departments in the country. The number of faculty presentations at the annual Orthopaedic Research Society meeting is one of the highest of any institution in the country, according to Dr. Marcus.

"It is so exciting to see what's going on here," said Dr. Marcus. "Many of the orthopaedic problems that we currently treat are really about the molecular biology of the bone and cartilage cells. It often comes down to the genes and the DNA. We have scientists who can upregulate a gene and produce bone cells that start making fat instead of bone, leading to osteoporosis. Or they can regulate a gene in a cartilage cell and control cartilage development."

Many individuals in Dr. Marcus' department have been awarded recognition for their outstanding achievements in research. Recently, *Design News Magazine* named Dr. Hunter Peckham, who leads the department's functional electrical stimulation group, "Engineer of the Year." Dr. Ed Greenfield and his team have received the Kappa Delta Award from the Orthopaedic Research Society for their work on bone implant loosening. And Dr. Victor Goldberg received the American Orthopaedic Association's Alfred Shands Award for lifetime achievement in orthopaedic research and the Distinguished Investigator Award for his career contributions from the Orthopaedic Research Society.



**James Dennis, PhD, heads the Tissue Engineering Laboratory in the Department of Orthopaedics at Case Western Reserve University. He holds a bio-reactor (above) invented in his laboratory to grow cartilage (below).**



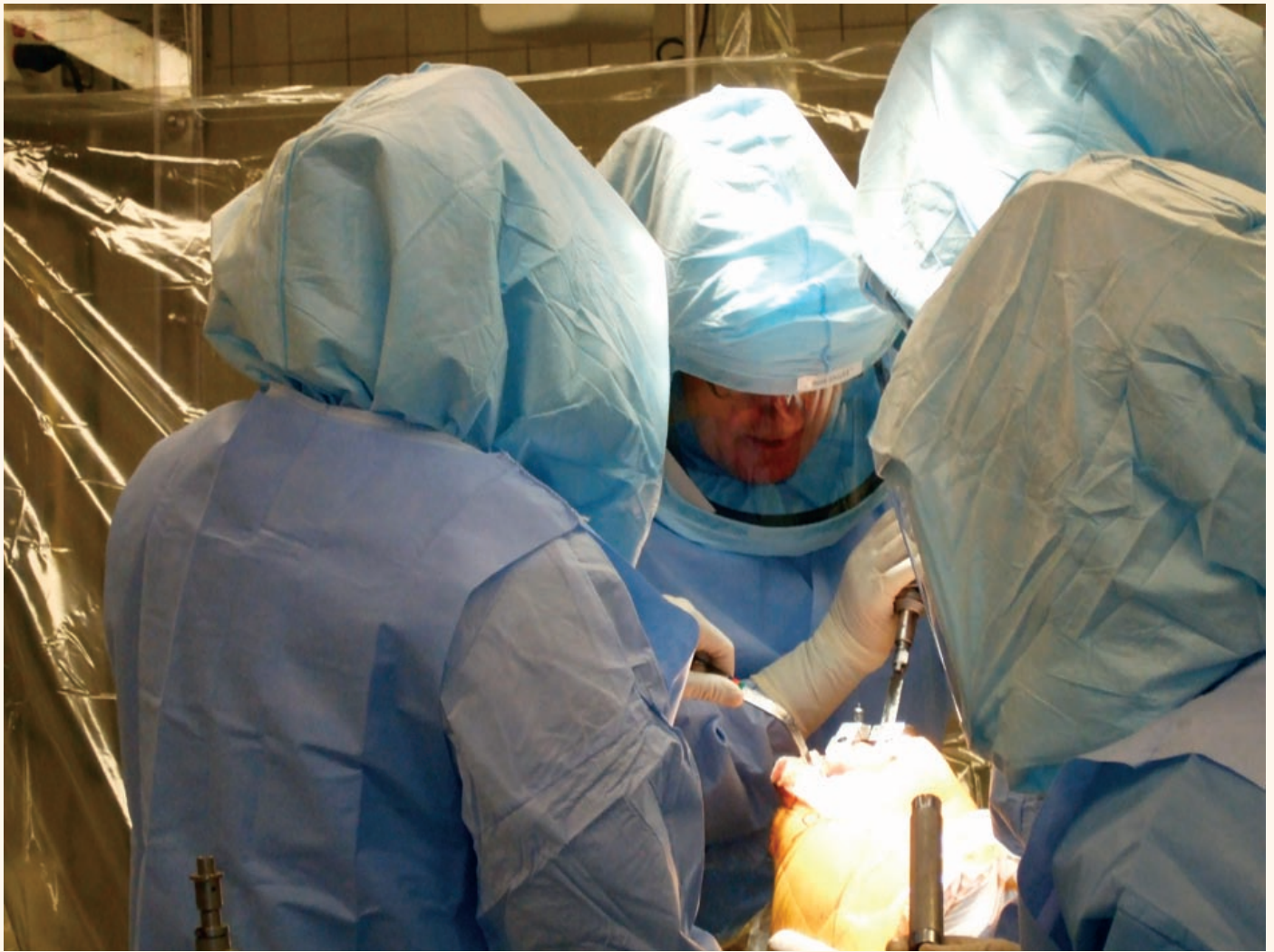


PHOTO BY NANCY KOLACZKO, RN

**Dr. Randall Marcus and his surgical team wear orthopaedic space suits while performing joint replacement surgery to decrease the risk of infection. Specially designed ORs at UHCMC also help in this endeavor.**

“These individuals are the finest examples of leaders in orthopaedic research, not only in this department but also in the international orthopaedic community,” said Dr. Marcus.

In the area of education, UHCMC is regularly honored by the American Orthopaedic Association by being selected to host traveling fellows from other nations. It is also regularly selected by the Insall Knee Society to host its traveling fellows.

“The choice of our department, year after year, as a destination of surgeons from Great Britain, Austria, New Zealand, Germany, Switzerland, Asia ... is something that makes all of us very proud,” said Dr. Marcus.

UHCMC’s orthopaedic residency program continues to be one of the more highly sought-after post-doctoral training programs in the country. The residency remains a five-year clinical and academic program for four residents and a six-year program for two residents who spend their PGY-2 year performing basic-science research in one of the orthopaedic department’s active research laboratories.

Additionally, the department continues to welcome new physicians and scientists to enhance its clinical, educational and research programs. During the past four years, seven new surgeons and five additional scientists were added.

“It’s very gratifying to help a patient by replacing their worn out joint or fixing a deformity or a broken bone, but it’s also very exciting to be involved with inventing newer technologies which can help prevent some of these problems totally or maybe fix them with less invasive methods,” said Dr. Marcus. “And then there are the young residents here always pushing you to be at the cutting edge.”

Without a doubt, Dr. Marcus feels the UHCMC orthopaedic department is one of the best in the country — for clinical care, research and education. And he knows the department’s success has not been an accident. It was purposely planned and cultivated by many great departmental leaders, past and present, with the aid of a countless number of individuals.

“We have a century-old tradition of outstanding clinical care, because we’ve been involved in finding new and better ways,” he said. “Much potential and hope lies ahead.”

*For more information about the Department of Orthopaedics at University Hospitals Case Medical Center, call 216-844-3041, or visit <http://uhhospitals.org>. ■*