A MESSAGE FROM THE CHAIR

Welcome to the 2016 edition of Orthopedics and Rehabilitation in Review. In this issue, we highlight a number of promising research initiatives and introduce you to our new faculty. We are also pleased to announce the opening of two new facilities.

UW Health at the American Center, the culmination of many years of careful planning, brings together orthopedic surgical and clinical care with an unprecedented array of services. UW Health at The American Center allows us to provide remarkable care for our patients, a learning environment for our students and research opportunities for our faculty and staff.

UW Health Rehabilitation Hospital is only the second facility of its kind in Wisconsin. The hospital is designed to help patients in need of intensive inpatient rehabilitation reach their highest level of recovery.

We are fortunate to have an outstanding group of physicians and scientists working in the Department of Orthopedics and Rehabilitation. We invite you to visit uwhealth.org/ortho and ortho.wisc.edu to learn more about our faculty, clinical programs and latest research.

Thomas Zdeblick, MD
A.A. McBeath Professor and Chairman
Department of Orthopedics and Rehabilitation

Neuromuscular Biomechanics Lab: Groundbreaking Research for Athletes

Three-dimensional computerized analysis provides assessment of running mechanics, including precise joint motions and ground contact forces.

As the appeal of running has grown, so has the incidence of running-related injuries. Through the years, physicians, coaches, athletic trainers, physical therapists and orthopedic researchers have focused on ways to increase running efficiency and decrease running injuries.

At the University of Wisconsin School of Medicine and Public Health, physicians and scientists working in conjunction with the University of Wisconsin Athletic Department have developed a special expertise in preventing and treating running injuries.

Professor Bryan Heiderscheit, PhD, director of the Neuromuscular Biomechanics Lab in the UW Department of Orthopedics and Rehabilitation, practices physical therapy at the UW Health Sports Rehabilitation Clinic and is director of the UW Health Runners Clinic.

The runners clinic is designed to speed recovery from existing injuries and reduce the risk of future injuries.

continued on back page
Welcome to Our New Orthopedic and Rehabilitation Providers

SCOT BROWN, MD
Joint Replacement and Orthopedic Oncology
Clinical Interests
• Direct anterior total hip replacement
• Total knee replacement
• Revision hip and knee replacements
• Bone and soft tissue sarcoma (pediatric and adult)
• Metastatic cancer in the pelvis and extremities

COURTNEY HOGENDORN, MD
Medical Director
UW Health Rehabilitation Hospital
Clinical Interests
• Inpatient rehabilitation medicine
• Stroke rehabilitation
• Brain and spinal cord injury rehabilitation

DREW WATSON, MD
Sports Medicine
Clinical Interests
• Pediatric sports medicine
• Prevention and management of sports-related injuries
Research Interests
• Pediatric exercise physiology
• Cardiovascular adaptations to exercise
• Predictors of injury in competitive athletes

PAUL WHITING, MD
Orthopedic Trauma
Clinical Interests
• Pelvic and acetabular trauma
• Complex articular fractures
• Treatment of patients with multiple injuries
• Post-traumatic reconstruction

OrthoAccess is your resource for obtaining information about the Department of Orthopedics and Rehabilitation. You can:

• Request more information about any of the articles in this newsletter
• Schedule a consult or refer a patient to a UW Health orthopedic and rehabilitation provider
• Learn about orthopedic and rehabilitation research at the UW School of Medicine and Public Health
• Find out more about UW Health orthopedics and rehabilitation services and providers

OrthoAccess is for non-emergency, orthopedic and rehabilitation services. For emergency cases, consult with the most appropriate emergency or urgent care center. UW Health Access Center is available 24 hours, 7 days a week at (800) 472-0111 or (608) 263-6796 to assist with emergency care.
Patients who need intensive rehabilitation services have a new and innovative destination for care. UW Health Rehabilitation Hospital is only the second facility of its kind in Wisconsin.

The freestanding, 50-bed inpatient facility—located on 10 acres adjacent to UW Health at The American Center on Madison’s east side—offers specialized programs for people who have had a stroke, brain and spinal cord injuries, amputations, complex orthopedic injuries and other conditions that require inpatient rehabilitation services. The hospital is designed to promote recovery outside of the traditional hospital setting by offering patients an immersive rehabilitation experience that helps support their independence and reintegration into their homes and communities.

UW Health Rehabilitation Hospital is staffed with an interdisciplinary team of specially trained physicians, nurses and therapists. The team works with patients (and their families) to help them regain their ability to perform daily tasks, cognitive processes, and physical function.

Among the unique features and services at the facility are: a functional-living apartment where patients and their families can practice independent living before going home; an adaptive kitchen for re-learning daily living skills; a car module to train patients and family members in safe car-transfer techniques; two large therapy gymnasiums equipped with the latest equipment and therapy devices; and dialysis provided by Wisconsin Dialysis.

The facility also offers two floors of large private patient rooms, a secure brain-injury unit with monitored rooms, patient lifts and dining areas, and a dedicated stroke unit with specialized equipment. Outdoors, the facility features a healing garden, mobility courtyard, and basketball court and golf area designed for more athlete-focused recovery.

UW Health Rehabilitation Hospital is a partnership of UW Health, Unity Point Health-Meriter and Kindred Healthcare.

UW Health Rehabilitation Hospital is located at 5115 North Biltmore Lane, just south of UW Health at The American Center.

UW Health Rehabilitation team creates individual care plans to meet each patient’s needs and goals.

Rooms are large so loved ones can be a part of recovery.

TO LEARN MORE ABOUT UW HEALTH REHABILITATION HOSPITAL:
Visit uwhealthrehabhospital.com

TO REFER A PATIENT FOR AN ADMISSION EVALUATION:
Call (608) 592-8111
Mike Witt is a member of the UW Orthopedic Development Board. As a result of his own patient experience and subsequent understanding of the promising future of orthopedic treatment, he is working to advance the research and academic mission of the Department through philanthropy and community outreach.

If you spend five minutes in Mike’s office, you know he’s an avid Badger fan. If you spend a little more time with Mike, you learn that he is committed to his family, his profession, staying active and, recently, advancing the research efforts of the UW Health orthopedic physicians and UW researchers who changed his life.

Mike, a senior vice president at the Robert W. Baird office in Madison, is a 1990 graduate of UW-Madison. While at UW, he earned a degree in psychology and was a linebacker on the 1986–1988 Badgers football teams. After football, Mike remained active well into his 40s, competing in triathlons and marathons, playing tennis, and swimming, until increasing hip pain put a stop to all exercising.

He recalls with a wince, “The pain was terrible. It affected my ability to walk, my entire lifestyle.”

With a diagnosis of arthritis with bone spurs, Mike sought out Richard Illgen, MD, UW Health orthopedic surgeon who pioneered robotic-assisted hip replacements.

Mike’s hip surgery was early on a Monday morning. By the afternoon, he “felt great” and was ready to go home, but Dr. Illgen sent him to the UW Carbone Cancer Center where his hip was irradiated to destroy any residual stem cells that could potentially develop into more bone spurs.

“The whole experience intrigued me; it sparked my curiosity and made me realize what a wonderful medical facility we have here. And, what a talented orthopedic surgeon Dr. Illgen is. He made it possible for me to walk again.

“Before the surgery, I couldn’t play tennis with my son. Now I play three to four times a week. I couldn’t walk 18 holes on the golf course because of the pain. Now I have no pain at all.

“I’ve told this story to hundreds of people since then because it was such an amazing experience. And the more I told the story, the more intrigued I became by the role of stem cells in orthopedic medicine.”

Mike later attended a stem cell and regenerative medicine presentation by William Murphy, MS, PhD, UW Health orthopedic researcher, and Thomas Zdeblick, MD, chairman of the Department of Orthopedics and Rehabilitation.

What happened that night was what Mike calls an “aha moment”—one that led to further conversations with Murphy and his colleague, Wan-Ju Li, PhD, who studies the use of pluripotent stem cells to produce a patient’s own replacement tendons and ligaments. “The more I learned, the more I began to realize how much is happening in arthritis and reparative medicine at UW,” says Mike.

“If we want to move forward, to perfect these treatments, we need people to support this amazing research. Whether we give of our time, our money, by involving others or by considering The Freedom of Movement Fund in our estate planning, we can change the lives of so many people and their families.”
Thank You to Our Donors

John Allen
Donald Anderson
Austad and Son Inc
Harvey Barash
Richard and Judy Behling
David and Kristi Bernhardt
Alison Brooks
Warren Buckles
Kathleen Carr and
Adam Borseth
ConMed
Faye Deutschkron
Will and Erin Enright
Ferring Pharmaceuticals Inc
James and Kim Gilmore
James and Jordan Glover
Lisa Goforth
Tom and Ruthann Grantham
Joe and Jacki Greene
Ellen Gunter
Eric and Elizabeth Hagerup
Michael Henke
Thomas Henke
Kayla and Charles Hiller
Hooper Foundation
Virginia and David Huber
James Huffer
Craig Hungerford
J. H. Findorff & Son Inc.
Wayne Jahns
Beth Junge
Kent and Sally Klagos
Richard and
Clairanne Kotenbeutel
Kevin Kourba
Greg and Ann Landry
Bob and Sharon Landsee
Life Instrument Corporation
Stewart Macaulay
Lawrence Markey
Judith McCleary
Marcia McDermid
Gary and Lynn Mecklenburg
William and Constance Mills
Elisabeth Noel
Andy and Sue North
Grant and Jodi Oster
Shirley Pitts
Jane and Steve Powers
Amanda Reese
Eleanor Richter
Stanley Richter
Raymond and Kelly Rizzo
Jeff and Carolyn Roethe
Matt and Laura Roethel
Tarek Saleh
Peggy Scarpace
Karl and Tracey Schaphorst
Douglas Schoepf
Peter and Martha Schram
John Sheehan
Bo Song
Staff Electric Co Inc
David Stroik
Dori Suddarth
Ron and Chris Vincent
Carolyn Vineyard
Nancy Vogt
John Walsh
Andrew Walz
Randi Welch and Pam Jahnke
John and Lynn Westphal
Mike Witt
Jim and Jessica Yehle
Tom Zdeblick and
Stacey Brickson
John and Pat Zimbrick
Edward and Joan Alschuler
Jennifer Auerbach
John and Kathleen Bach
Harold and Jenny Bitter
Michael and Kathy Blumenfeld
Eric Brodsky and Freddi Adelson
Richard and Peggy Daluge
Genna Dewoskin
James and Jessica Doyle
Gay Elison
Rachel Egan
Cindy Fawver
Marty and Amy Fields
Andrew Frank
Albert Friedman and
Susan Tikalsky
Gail Gibbons
Alan and Debra Green
Eric Greiling and
Margaret Tennessen
Angela Heine
Gregory and Susan Hill
Jef and Jeanne Hinds
Christopher Hines
Michael and Laura Holt
Michael and Sally Honeck
Stephen and Linda Kalin
Taddy Kalas
Emily Kalnicky
Richard and Laura Kalnicky
Sandra Keil
Logan Keleny
Sally Kelling
Dana Khani
Stanley and Sharon Koenig
Amanda Kreger
Robert Krueger
Brian and Susan Lochen
Lisa Lonielo
Lina Martin
Amy Mietzel
Arthur Polans and Myra Schultz
Allison Prajapati
Michael Pressman and
Marsha Cohen
Mary Rambung
Gary and Judy Ries
Jesse and Stephanie Rintaia
Peter and Carrie Ritz
Ron and Catherine Rottier
Mark and Peggy Scallon
Laurie Schmidt
Christine Schultz
Paul and Sherie Sondel
Ralph and Deborah Stamler
Leon and Barbara Swerin
Kimberly Tennier
John and Mary Thilly
Peter Thilly
Rocky Thompson
Grant Till
Joe and Cindy Walz
Van and Elizabeth Whitesel
James and Nancy Youngerman
Keith and Margaret Zutter

MEET JOE GREENE:
OUTREACH MANAGER/
DEVELOPMENT DIRECTOR

Joe Greene has worked with the Department of Orthopedics and Rehabilitation for more than 25 years. With all his institutional knowledge, Joe provides two important functions for the department.

Outreach Manager
Joe is the primary liaison for medical professionals and health systems who refer patients to UW Health Orthopedic and Rehabilitation providers. He provides information on new faculty, clinical research and continuing medical education opportunities. Joe also helps to resolve referral, access or communication concerns. In addition, he oversees many service delivery projects and has a special interest in the use of health care information technology and population health within orthopedics.

Philanthropic Development Director
Joe also serves as the primary contact for individuals and organizations interested in supporting the department’s research and education initiatives. In this role, he works closely with donors and the UW Orthopedic Development Board to secure contributions to The Freedom of Movement Fund and other funds within the department that support academic initiatives.

TO LEARN MORE ABOUT THE FREEDOM OF MOVEMENT FUND OR DONATE ONLINE:
Visit ortho.wisc.edu/giving, email Joe at jgreene@uwhealth.org or call him at (608) 220-6196.

In Memory of Phillip Keleny
To support concussion research and rehabilitation

Edward and Joan Alschuler
Jennifer Auerbach
John and Kathleen Bach
Harold and Jenny Bitter
Michael and Kathy Blumenfeld
Eric Brodsky and Freddi Adelson
Richard and Peggy Daluge
Genna Dewoskin
James and Jessica Doyle
Gay Elison
Rachel Egan
Cindy Fawver
Marty and Amy Fields
Andrew Frank
Albert Friedman and
Susan Tikalsky
Gail Gibbons
Alan and Debra Green
Eric Greiling and
Margaret Tennessen
Angela Heine
Gregory and Susan Hill
Jef and Jeanne Hinds
Christopher Hines
Michael and Laura Holt
Michael and Sally Honeck
Stephen and Linda Kalin
Taddy Kalas
Emily Kalnicky
Richard and Laura Kalnicky
Sandra Keil
Logan Keleny
Sally Kelling
Dana Khani
Stanley and Sharon Koenig
Amanda Kreger
Robert Krueger
Brian and Susan Lochen
Lisa Lonielo
Lina Martin
Amy Mietzel
Arthur Polans and Myra Schultz
Allison Prajapati
Michael Pressman and
Marsha Cohen
Mary Rambung
Gary and Judy Ries
Jesse and Stephanie Rintaia
Peter and Carrie Ritz
Ron and Catherine Rottier
Mark and Peggy Scallon
Laurie Schmidt
Christine Schultz
Paul and Sherie Sondel
Ralph and Deborah Stamler
Leon and Barbara Swerin
Kimberly Tennier
John and Mary Thilly
Peter Thilly
Rocky Thompson
Grant Till
Joe and Cindy Walz
Van and Elizabeth Whitesel
James and Nancy Youngerman
Keith and Margaret Zutter
Developing Exercise Prescriptions to Prevent Osteoporosis

As the American population ages, the number of osteoporosis-related bone fractures has increased. This reality has sharpened interest in understanding the relationship between exercise and osteoporosis prevention. Early studies into the effect of high impact exercise on building bone strength inspired women to add activities such as running, aerobics, dance and tennis to their exercise regimens. More recent research suggests that exercising early in life produces greater gains in bone strength. Peak bone mass in women occurs between the ages of 16 and 20. Bone mass gradually declines when women reach their mid-30s and declines more rapidly after menopause.

UW Health orthopedic surgeon Tamara Scerpella has been studying the connection between exercise, bone mass development and osteoporosis since 1998. Her research includes one of the longest continuous studies of human musculoskeletal growth, assessing the effects of physical activity on developing bone mass, structure and strength.

Beginning in 1998, Dr. Scerpella’s team enrolled 250 seven- to 10-year-old girls in a study that followed their bone growth for up to 17 years. The researchers gathered data about the girls’ participation in physical activity, diet, height, weight and lapses in activity. Their analyses show that exercise during childhood and adolescence enhances bone formation that will improve adult skeletal strength. The optimal type, timing and amount of exercise for maximal benefit are yet to be determined.

The next step is to determine if specific magnitudes or types of movement affect developing bone differently. The team will compare typical up-and-down, side-to-side and forward-backward movements to see how these forces relate to bone remodeling. The objective is to identify which movement patterns stimulate the greatest improvements in bone strength at different body sites.

When these questions are answered, physicians will be able to recommend “exercise prescriptions” to optimize bone acquisition during childhood and adolescent growth, enhancing lifelong skeletal strength and decreasing fracture risks.
UW Health at The American Center

UW Health at The American Center—a unique health and wellness facility located on Madison’s east side—opened last August. The five-story, 503,000 square foot building provides inpatient and outpatient care, along with wellness programs and a sports performance center. Orthopedic and rehabilitation programs are among The American Center’s key services. The facility was designed to meet health and wellness needs in a patient- and family-centered environment.

UW Health at The American Center includes:

• A 56-bed inpatient hospital for orthopedic and general medical/surgical patients
• Two floors of clinic exam rooms for outpatient care in a variety of clinical specialties
• Outpatient diagnostic and treatment procedures, including traditional and MRI
• Physical and occupational therapy
• A wellness and sports performance wing with two pools, sports courts, sprint track, wellness studio and learning kitchen
• A 24-hour emergency department

Contact Information

Referrals and consult requests for UW Health physicians practicing at The American Center are the same as for referring to University Hospital.

Patient transfer or urgent consultation request:
Contact the Access Center at (800) 472-0111 or (608) 263-6796

Outpatient referral to a UW Health Orthopedic Specialist
For consultation requests, contact Ortho Access at (888) 978-4611 or orthoaccess@uwhealth.org.

You can also visit uwhealth.org/referral or follow the same process you would for a referral to other UW Health locations.

For more information about UW Health at The American Center:
Visit uwhealth.org/americancenter

Sports Performance Training Center

UW Health Sports Medicine is dedicated to the health, fitness and performance of all athletes. The new Sports Performance Training Center is designed to promote the long-term development of athletes of all ages and ability levels.

The state-of-the-art facility includes:

• 13,000 square feet of indoor and outdoor field turf
• Regulation basketball/volleyball court
• 55-yard sprint track
• Sports movement room with 12-camera optical infrared system for 3-D movement mechanics
• Free-weight training area, Keiser Triple Trainers and Power Racks
• Four-lane, 25-yard competitive lap pool and warm-water therapy pool
Neuromuscular Biomechanics Lab (continued from page 1)

“How people run plays a large role in injuries,” Dr. Heiderscheit says. “Common running problems like shin splints, stress fractures and knee and back pain are often traced to flawed running form or poor training habits. We can show the athletes which running styles can reduce their risk of injury.”

Heiderscheit says there are simple ways to help people—especially novice runners and those who haven’t run for many years—to run better and remain healthy.

One strategy he has been studying is having runners use a shorter stride. By reducing their stride length by 5 to 10 percent, they change their body posture when landing.

“Using a shorter stride, but maintaining the same speed, a runner’s foot is on the ground for less time, so the body becomes ‘more springy.’ As a result, there is less loading on the joints, which lessens the risk of many common running injuries.”

In another study, Dr. Heiderscheit is collaborating with experts from UW Health Sports Medicine and the UW School of Engineering to develop ways to reduce hamstring injuries in elite, professional and recreational athletes. Such injuries can take athletes out of competition for all or part of a season.

The researchers developed a three-phase rehabilitation protocol with specific recovery milestones that guide and track the recuperation process. So far, using the protocol, fewer than 10 percent of the athletes sustained a re-injury, a substantial improvement over the typical re-injury rate of 30 percent.

The success of Dr. Heiderscheit’s studies rests, in part, on the partnership between the Department of Orthopedics and Rehabilitation and the UW Athletic Department through the Badger Athletic Performance program.

“With the insights we gather from our work with the Badgers’ sports programs, we can assist the coaches and athletic trainers in developing individualized training and recovery programs for student-athletes, to help them improve, stay healthy and avoid injury.”