The Orthopaedic Research and Education Foundation (OREF) was founded in 1955 to ensure an expanding base of knowledge and effective, evidence-based treatment protocols for orthopaedic surgeons to continually improve patient care. Since 1955, OREF has awarded more than $140 million in research and educational grants and awards that benefit all of orthopaedics. A not-for-profit 501(c)(3) organization, OREF welcomes contributions from individuals and organizations; gifts are tax-deductible to the extent allowed by law.

For more information please visit www.oref.org or http://on.oref.org/grantinfo

For information on how to apply for OREF Grants and Awards, please access http://on.oref.org/grantinfo, or call or email:

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2014 Grants Awarded
OREF provides an essential step up for early career researchers to build upon new ideas until they are ready to compete with established scientists for national grants from agencies such as the National Institutes of Health and Canadian Institutes of Health Research.

– Sevan Hopyan, MD, PhD
### OREF RESEARCH GRANTS AND AWARDS FUNDED FOR 2014

#### MENTORED CLINICIAN SCIENTIST GRANT

**Robert A. Magnussen, MD**  
Ohio State University  
Can Physical Examination Predict Patient-Reported Outcomes of ACL Reconstruction?

#### NEW INVESTIGATOR GRANTS

**Charla R. Fischer, MD**  
Columbia University Medical Center  
The Effect of Calregulin on Osteoclastogenesis and Ovariectomy-Induced Bone Loss in Mice  
Funding made possible by Stryker

**Carolyn M. Hettrich, MD**  
University of Iowa  
Scapular Notching in Reverse Shoulder Arthroplasty with Medialized Versus LaterIALIZED Implants: A Clinical and Finite Element Study  
Funding made possible by Zimmer Holdings, Inc.

**Rowena McBeath, MD, PhD**  
Thomas Jefferson University  
Engineering Human Fibrocartilage Using Transdifferentiated Tenocytes  
Funding made possible by Wright Medical

**Addisu Mesfin, MD**  
University of Rochester  
Defining the Role of BMP Signaling in the Development of Degenerative Disc Diseases  
Funding made possible by the Mahendra Patel, MD Research Fund

#### OREF/AHKS RESIDENT CLINICIAN SCIENTIST TRAINING GRANT IN TOTAL JOINT ARTHROPLASTY

**Brian P. Gladnick, MD**  
Hospital for Special Surgery  
Quantification of Mid-Flexion Laxity After Total Knee Replacement  
Funding made possible by Zimmer Holdings, Inc.

#### RESIDENT CLINICIAN SCIENTIST TRAINING GRANTS

**Brandon S. Beamer, MD**  
Beth Israel Deaconess Medical Center  
Biomechanical Analysis of Tibiofibemoral Contact Pressures After Novel Repair of Meniscus Horizontal Cleavage Tears  
Funding made possible by the Dr. Dane and Mrs. Mary Louise Miller Endowment Fund

**Jon-Michael E. Caldwell, MD**  
Columbia University Medical Center  
Matrix Stiffness and Sarcoma Growth: Scientific Implication of Compartmentalization  
Funding made possible by the Ira A. Roscheile Family Foundation

**Eric J. Feuchtbaum, MD**  
Washington University  
Randomized Trial of Alvimopan for the Reduction of Ileus After Long Posterior Spinal Fusion  
Funding made possible by the Dr. Dane and Mrs. Mary Louise Miller Endowment Fund

**Alexia Hernandez-Soria, MD**  
Hospital for Special Surgery  
Evaluation of Simvastatin-Containing Nanomedicine in Bone Fracture Healing in Old and Young Mice  
Funding made possible by the Dr. Dane and Mrs. Mary Louise Miller Endowment Fund

**Andrew J. Pugely, MD**  
University of Iowa  
Development of a Multi-Center Quality Improvement Tool After Hip Fracture Surgery: A Hospital-Based, Risk-Adjusted Pilot Study  
Funding made possible by Thomas P. Sculco, MD

**Nathan W. Skelley, MD**  
Washington University  
Biomechanical Analysis of Tensile Properties and Fiber Alignment in the Anterior Cruciate Ligament to Map Ligament Bundle Design  
Recipient of the MTF/Charles H. Herrndon Resident Clinician Scientist Training Grant  
Funding made possible by the Musculoskeletal Transplant Foundation

**Minal D. Tapadia, MD**  
University of California, Irvine  
Schwann Cell-Derived Desert Hedgehog as a Therapeutic Adjunct for Compressive Neuropathies  
Funding made possible by the Ira A. Roscheile Family Foundation

**Alexander A. Theologis, MD**  
University of California, San Francisco  
The Effect of the Endocrine Disrupting Chemical Bisphenol A (BPA) on Endochronal Ossification in Fracture Repair  
Recipient of the MTF/Charles H. Herrndon Resident Clinician Scientist Training Grant  
Funding made possible by the Musculoskeletal Transplant Foundation

**Adam M. Wegner, MD, PhD**  
University of California, Davis  
The Role of Nos2 as a Mediator of Osteoarthritis and a Potential Target for Treatment  
Funding made possible by the Ira A. Roscheile Family Foundation

#### OREF RESIDENT RESEARCH PROJECT GRANTS

**Hoyt Randall Beard, MD**  
Wake Forest University Health Sciences  
TeleOrtho: The Design, Implementation and Analysis of a Telemedicine Orthopaedic Consultation and Referral Network

**Wesley F. Frevert, MD**  
University of Florida, Gainesville  
Evaluation of Biofilms on Orthopaedic Prostheses Using PCR, Electron Microscopy and Functional Biofilm Assay

**Christina G. Kane, MD**  
University of Massachusetts  
Challenging the Traditional Methods of Intra-Operative Learning: Comparing the Effectiveness of a Computer-Based Video Tutorial with One-on-One Expert Teaching for Zone II Flexor Tendon Repairs

**Eren O. Kuris, MD**  
University of Kansas  
Post-Operative Drainage and Serum Vancomycin Levels After Topical Adjunctive Application of Vancomycin Powder in Patient with Posterior Instrumented Spine Surgery

**Brian C-F. Lau, MD**  
University of California, San Francisco  
Preoperative MRI (T, Rho) Findings to Predict 1-Year Post-ACL Reconstruction Outcomes

**Marco C. Mendoza, MD**  
Northwestern University  
Evaluation of the Effect of Vancomycin Powder on Bone Healing in a Rat Spinal Arthrodesis Model  
In memory of Harry N. Herkowitz, MD

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continued…
OREF RESEARCH GRANTS AND AWARDS FUNDED FOR 2014

OREF RESIDENT RESEARCH PROJECT GRANTS (continued)
Karthikeyen E. Ponnusamy, MD
Johns Hopkins University
Factors Affecting Readmission and Discharge Disposition for Total Joint Arthroplasty Patients

Matthew D. Riedel, MD
Boston Children’s Hospital (Harvard)
Development of a Risk Severity Score for Pediatric Spine Surgical Site Infection

Cory M. Stewart, MD
University of Chicago
Role of Bone Morphogenic Proteins in Rotator Cuff Degeneration and Healing

Robert W. Westermann, MD
University of Iowa
Finite Element Analysis of Biomechanics in a Single-Bundle Anterior Cruciate Ligament Reconstructed Knee Model

Jeffrey Wilde, MD
University of Chicago
Improving the Recovery of Rotator Cuff Tears by the Targeted Inhibition of p38 MAPK

Ernest Y. Young, MD
Mayo Clinic
Long-Term Follow-Up of Pelvic Osteotomy for Developmental Hip Dysplasia

OREF/DEPUY RESIDENT RESEARCH PROJECT GRANTS
Bryan G. Beutel, MD
New York University
Characterization of a Novel and Translational Measurement of Fracture Toughness in Human Bone

Gregory L. Cvetanovich, MD
Rush University Medical Center
Gait Biomechanics in Patients with Femoracetabular Impingement

Daniel J. Fuchs, MD
Northwestern University
Ultrasound-Mediated Gene Therapy for Bone Formation in Spinal Fusion

Elizabeth R. Inkellis, MD
University of California, San Francisco
Epidemiology of Severe Forearm Fractures Within the Major Extremity Trauma Research Consortium

Matthew C. Kinney, MD
University of California, San Diego
Determining the Role Satellite Cells Play in Regulating the Serum Sarcomere Adaptation to Chronic Muscle Stretch and the Development of Muscle Contracture

Natalie L. Leong, MD
University of California, Los Angeles
In Vitro Characterization of Three Unique Cell Populations from the Anterior Cruciate Ligament for Use in Ligament Tissue Engineering

Venu M. Nemani, MD, PhD
Hospital for Special Surgery
MicroCT Analysis of Bone Microarchitecture in Patients with Bisphosphonate-Associated Atypical Femur Fractures

Joshua A. Parry, MD
Mayo Clinic
A Bioactive Porous Interference Screw for Improved Graft Fixation

Sara M. Putnam, MD
Washington University
Redefining the False Profile Radiograph and the Correlation with Anterolateral Hip Coverage

Marcus A. Rothermich, MD
Washington University
A Comparative Molecular Analysis of Gene Expression in Anterior Cruciate Ligament Injuries With and Without a Concomitant Meniscus Tear

Lindsey C. Sheffler, MD
University of California, San Francisco
Radiation Exposure to Breast Tissue in Female Orthopaedic Surgeons

Beverlie L. Ting, MD
Massachusetts General Hospital
25-Hydroxy-Vitamin D and Bone Turnover Marker Levels in Premenopausal Patients with Distal Radius Fractures

Kenneth M. Vaz, MD
University of California, San Diego
Effects of Immobilization on Tibial and Sural Nerve Biomechanics in a Rat Diabetic Neuropathy Model

Dean Wang, MD
University of California, Los Angeles
Preconditioning of Hamstring Tendon Grafts for Anterior Cruciate Ligament Reconstruction

Anthony Lee Yu, MD
Loyola University Chicago
The Effect of Early Versus Delayed Wound Cleaning on Surgical Site Bacterial Recolonization Following Total Knee Arthroplasty

OREF/EXACTECH RESIDENT RESEARCH PROJECT GRANTS
Ananth Eleswarapu, MD
University of Chicago
Lumbar Interbody Fusion Using Percutaneously Delivered Synergistic Bone Morphogenetic Proteins

Harold A. Fogel, MD
Loyola University Chicago
All-Inside vs. Transtibial Anterior Cruciate Ligament Reconstruction: A Biomechanical Analysis of Tibial Fixation

Andrew G. Geeslin, MD
Western Michigan University
Coracoclavicular Ligament Reconstruction: Biomechanical Analysis of Clavicle Fracture Risk

Emily C. Harnden, MD
University of Washington
Does the Radius of Curvature of the Lateral Tibial Plateau Affect ACL Strain? A Biomechanical Study

HHMI/OREF MEDICAL RESEARCH FELLOWS GRANT
Vinicius Ladeira Craveiro
Hospital for Special Surgery
Molecular Regulation of Cartilage and Bone in Two Novel Mechanical Loading Mouse Models with Osteoarthritis-Like Pathology

Funding made possible in part by the Douglas E. Ramsey, MD Endowment Fund
OREF is great about keeping the orthopaedic community informed of what grant recipients are working on in research and in translational medicine. OREF continues to bang the drum. We need to do our part to help.

– Danielle S. W. Benoit, PhD
“Am I going to be able to walk again without help?”
Amanda Marshall, MD
hears this question nearly every day in her office.

Despite the exceptional success total knee and total hip arthroplasty have in restoring joint function and mobility, polyethylene wear and osteolysis continue to be major factors that limit the longevity of current implants.

With two OREF grants, Dr. Marshall investigated particle-induced osteolysis on mesenchymal stem cell replication in an effort to develop alternatives to revision surgeries associated with bone loss and subsequent aseptic loosening.

Read more at www.oref.org/AmandaMarshall

The OREF grant allowed me to work across several departments of my institution—dentistry, pathology, the Southwest Research Institute—which was instrumental in catapulting our lab’s efficiency and reputation.

Truly, OREF keeps alive the dream of conducting multidisciplinary clinically relevant basic science research.

– Amanda D. Marshall, MD