

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.

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Kenya McRae, JD, PhD
Vice President, Grants
(847) 384-4348
mcrac@oref.org

Mary Marino
Grants Manager
(847) 384-4359
marino@oref.org

Carmen Metoyer
Grants Administrator
(847) 384-4362
metoyer@oref.org

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

OREF CAREER DEVELOPMENT GRANT

Wellington K. Hsu, MD
Northwestern University
A Therapeutic Approach to Prevent Smoking-Mediated Bone Healing Inhibition
In honor of Mrs. Jean McGuire

OREF PROSPECTIVE CLINICAL RESEARCH GRANTS

John H. Healey, MD
Sloan Kettering Institute for Cancer Research
A Randomized Trial to Assess Patient Quality of Life and Function After Alternative Surgeries for Pathologic Fractures of the Femur

Brian R. Wolf, MD
University of Iowa
Outcome of Surgery for Anterior Shoulder Instability: A Prospective Multi-Center Cohort Study

OREF CLINICAL RESEARCH AWARD

James N. Weinstein, DO
Dartmouth-Hitchcock Medical Center
The Spine Patient Outcomes Research Trial (SPORT)

OREF/MTF RESEARCH GRANT

Abhijit S. Dighe, PhD
University of Virginia
Interaction Between Mesenchymal Stem Cells and T Cells During Osteogenesis

OREF/GOLDBERG RESEARCH GRANT IN ARTHRITIS

Allan L. Bucknell, MD
University of Colorado, Denver
Identification of Therapeutic Targets to Improve Arthroplasty Outcomes in the Presence of Co-Morbid Diabetes Mellitus
Funding made possible by the Dr. Victor and Mrs. Harriet Goldberg Endowment Fund

OREF/ASES/ROCKWOOD CLINICAL RESEARCH GRANT IN SHOULDER CARE

Eric T. Ricchetti, MD
Cleveland Clinic
Postoperative Three-Dimensional Computed Tomography Analysis of Implant Position and Outcome at Minimum Two-Year Follow-Up Following Total Shoulder Arthroplasty
Funding made possible by the Dr. and Mrs. Charles Rockwood Family Endowment Fund

RJOS/OREF/DEPUY RESEARCH GRANT IN WOMEN'S MUSCULOSKELETAL HEALTH

Laura L. Tosi, MD
Children's National Medical Center
Genetic Determinants of Peak Bone Mass in Healthy Young Adult Women

RESEARCH GRANT IN REVISION RELATED TO TOTAL ANKLE ARTHROPLASTY

Robin M. Queen, PhD
Duke University
Assessment of Physical Performance, Walking Mechanics, and the Cost-Effectiveness of Revision Total Ankle Replacement
Funding made possible by Wright Medical

OREF/MSTS CLINICAL RESEARCH GRANT IN ORTHOPAEDIC ONCOLOGY

Ginger E. Holt, MD
Vanderbilt University Medical Center
Real Time In Vivo Tumor and Tumor Bed Assessment After Soft Tissue Sarcoma Excision Using Optical Spectroscopy

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 Lateralized 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 Tibiofemoral 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 Compartments
Funding made possible by the Ira A. Roschelle Family Foundation

Eric J. Feuchtbaum, MD
Washington University
Randomized Trial of Alvimopan for the Reduction of Ileus After Long Posterior Spinal Fusion

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

OREF RESEARCH GRANTS AND AWARDS FUNDED FOR 2014

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. Herndon 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 Dr. Dane and Mrs. Mary Louise Miller Endowment Fund

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. Herndon 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 Nox4 as a Mediator of Osteoarthritis and a Potential Target for Treatment
Funding made possible by the Ira A. Roschelle 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

continued...

OREF RESEARCH GRANTS AND AWARDS FUNDED FOR 2014

OREF RESIDENT RESEARCH PROJECT GRANTS (continued)

Karthikeyan 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 Michigan
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 Serial 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 RESEARCH GRANTS AND AWARDS FUNDED FOR 2014

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

OREF PROGRAM AWARDS FUNDED FOR 2014

OREF PROGRAMS REGIONAL NEW INVESTIGATOR AWARDS

Eastern Orthopaedic Association
Southern Orthopaedic Association
Western Orthopaedic Association

ORS/OREF TRAVEL AWARDS IN ORTHOPAEDIC RESEARCH TRANSLATION

Matthew P. Abdel, MD
Mayo Clinic

Yohei Kawakami, MD, PhD
University of Pittsburgh

Denis Nam, MD
Washington University

Danyal H. Nawabi, MD
Hospital for Special Surgery

Shankar Thiagarajah, MD
University of Sheffield

ORS/OREF DISTINGUISHED INVESTIGATOR AWARD

Regis J. O’Keefe, MD, PhD
University of Rochester

OREF/CCJR CLINICAL PRACTICE AWARDS

**Gregory A. Brown, MD, PhD
(Spring Award)**
Park Nicollet Clinic – Meadowbrook
*Optimizing Venous Thromboembolism
Prophylaxis After Total Joint Arthroplasty:
A Risk-Stratified Multi-Modal VTE Prophylaxis
Protocol Reduces 30 Day All-Cause
Re-Admissions and 90 Day Venous
Thromboembolic Events*

**Michael B. Cross, MD
(Winter Award)**
Hospital for Special Surgery
*Diagnosis of Periprosthetic Joint Infection in
Revision Hip Arthroplasty with a Metal-on-Metal
Bearing or Corrosion*

IMPROVING LIVES

**by supporting
excellence in
ORTHOPAEDIC
RESEARCH**

“Am I going to be
able to walk again
without help?”

Amanda Marshall, MD
hears this question nearly
every day in her office.



Amanda Marshall, MD

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

To ensure research that will change patients' lives receives the critical funding it deserves, contribute to OREF's
2014 Annual Fund

today



www.oref.org/donate14

For more information, please contact:

Edward F. Hoover, Vice President of Development
(847) 384-4354 | hoover@oref.org

Orthopaedic Research and Education Foundation
6300 North River Road, Suite 700 | Rosemont, Illinois 60018-4261
(847) 698-9980 | www.oref.org



“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