1950 Winner(s)
Researcher(s): Dr Marshall R. Urist and Colleagues
Project: The Mechanism of Endosteal Bone Formation in Estrogen Treated Mice

1951 Winner(s)
Researcher(s): Dr Vernon P. Thompson and Dr Vernon D. Epstein
Project: Traumatic Dislocation of the Hip, A Survey of 204 Cases Covering a Period of Twenty-One Years

1952 Winner(s)
Researcher(s): Dr Robert A. Robinson
Project: An Electron Microscopic Study of the Crystalline Inorganic Component of Bone and its Relationship to the Organic Matrix

1953 Winner(s)
Researcher(s): Dr Charles F. Gregory and Dr George J. Garceau
Project: Bone Healing by Vital Staining Methods

1954 Winner(s)
Researcher(s): Dr Robert D. Ray
Project: The Development of Experimental Techniques and Their Application to Studies of Bone Growth and Metabolism

1955 Winner(s)
Researcher(s): Dr Charles W. Goff
Project: The Legg-Calve-Perthes Syndrome

1956 Winner(s)
Researcher(s): Dr Ignacio V. Ponseti
Project: Lesions of the Skeleton and Other Mesodermal Tissues which might be due to Aminoitrile Intake

1957 Winner(s)
Researcher(s): Dr Melvin J. Glimcher
Project: An Appraisal of the Problem of Fat Embolism

1958 Winner(s)
Researcher(s): Dr W.F. Enneking
Project: The Effect of Total Body Irradiation on Bone Transplants in Parabiosed Animals

1959 Winner(s)
Researcher(s): Dr Melvin J. Glimcher
Project: Molecular Structure and Biological Specificity in Mineralization

1960 Winner(s)
Researcher(s): Dr William S. Smith
Project: A Correlated Clinical and Experimental Approach to the Etiology of Congenital Dislocation of the Hip
1961 Winner(s)
Researcher(s): Dr Kirk J. Anderson
Project: Experimental Investigations of Large and Small Fragment Bone Implants and Extracts of Heterogenous Bone

1962 Winner(s)
Researcher(s): Dr Robert C. Mellors
Project: Rheumatoid Arthritis and the Cellular Origin of Rheumatoid Factors

1963 Winner(s)
Researcher(s): Dr Mary S. Sherman and Dr Roshen Irani
Project: The Pathologic Anatomy of the Clubfoot

Researcher(s): Dr J. William Fielding
Project: Cineradiography

Researcher(s): Dr Paul H. Curtis, Jr, and Dr LeRoy Klein
Project: Possible Mechanisms of Articular Cartilage Destruction in Septic Arthritis

1964 Winner(s)
Researcher(s): Dr George W.N. Eggers
Project: Cystic Change in the Iliac Acetabulum

Researcher(s): Dr William F. Neuman, PhD
Project: The Current Status of the Mechanisms of Calcification

1965 Winner(s)
Researcher(s): Dr Jerome Gross
Project: Mechanism of Connective Tissue Remodeling

Researcher(s): Dr O. Donald Chrisman
Project: Biochemical Aspects of Osteoarthritis

Researcher(s): Dr Richard S. Riggins and Dr Yosef H. Pilch
Project: Studies of the Antigenicity of Fibrosarcoma

1966 Winner(s)
Researcher(s): Dr Carl E. Anderson
Project: Invasion and Resorption in Enchondral Ossification: An Electron Microscopic Study

1967 Winner(s)
Researcher(s): Dr Gerald A.M. Finerman and Dr Leon E. Rosenberg
Project: Regulation of Amino Acid Transport and Collagen Synthesis in Fetal Rat Bone

Researcher(s): Dr Robert L. Fisher and Dr Frances DeGeorge, MA
Project: Idiopathic Scoliosis: An Investigation of Genetic and Environmental Factors
1968 Winner(s)
Researcher(s): Dr James M. Burkhart
Project: Parathyroid and Thyroid Hormones in the Development of Immobilization Osteoporosis

Researcher(s): Dr G.V.B. Cochran
Project: Electromechanical Characteristics of Moist Bone

Researcher(s): Dr Wayne H. Akeson
Project: Experimental Arthroplasty of the Canine Hip: Extracellular Matrix Composition in Non-Interpositional Arthroplasty and Cup Arthroplasty

1969 Winner(s)
Researcher(s): Dr Sandy C. Marks, Jr, DDS., PhD
Project: The Parafollicular Cell of the Thyroid Gland as the Source of a Potent Osteoblast-Stimulating Factor. Evidence from Experimentally Osteopetotic Mice

Researcher(s): Dr Walter Abendschein and Dr George W. Hyatt
Project: Ultrasonics and Selected Physical Properties of Bone

Researcher(s): Dr J. Robert Close
Project: The Functions of the Muscles of the Thumb, the Middle and Index Fingers

1970 Winner(s)
Researcher(s): Dr William H. Harris and Dr Robert H. Heaney
Project: Growth Hormone: The Effect on Skeletal Renewal in the Adult Dog

Researcher(s): Dr Lawrence C. Rosenberg
Project: Chemical Basis for the Histologic Use of Safranin O in the Study of Articular Cartilage

Researcher(s): Dr Jorge Galante, Dr William Rostoker, PhD, Dr Roger Lueck, and Dr Robert D. Ray, PhD
Project: Sintered Fiber Metal Composites as a Basis for Attachment of Implants to Bone

1971 Winner(s)
Researcher(s): Dr Clive C. Solomons, PhD, Dr Edward A. Milar, Dr William E. Hathaway, and Dr John E. Ott
Project: Osteogenesis Imperfecta: New Perspectives in Diagnosis and Treatment

Researcher(s): Dr. Reginald R. Cooper
Project: Skeletal Muscle Alterations During Immobilization, Denervation, Regeneration and Embryonic Myogenesis

Researcher(s): Dr Joseph M. Lane, Dr Darwin J. Prockop, Dr Peter Dehm, PhD, and Dr Lincoln J. Parkes, DVM
Project: Inhibition of Collagen Synthesis in Chick Embryos by the Proline Analogue L-Azetidine-2-Carboxylic Acid
1972 Winner(s)
Researcher(s): Dr Burton W. Marsh, Dr Leo Flynn, and Dr William F. Enneking
Project: Immunologic Aspects of Osteosarcoma

Researcher(s): Dr Adrian E. Flatt
Project: Problems in the Treatment of Ulnar Drift

Researcher(s): Dr B. Lawrence Riggs
Project: Bone Turnover--Sex Hormone--Parathyroid Hormone Relationships in Post-Menopausal Osteoporosis

1973 Winner(s)
Researcher(s): Dr Eric L. Radin, Dr Igor L. Paul, SCD, and Dr Robert M. Rose, ScD
Project: Studies of Joint Function

Researcher(s): Dr F. Richard Convery, Dr Donald R. Gunn, FRCS, Dr J. David Hughes, and Dr Wayne E. Martin
Project: The Systemic Manifestations of Polymethyl Methacrylate

Researcher(s): Dr Stephen M. Krane, Dr Sheldon R. Pinnell, and Dr Richard W. Erbe
Project: Collagen Lysyl Hydroxylase Deficiency: A New Heritable Disorder of Connective Tissue

1974 Winner(s)
Researcher(s): Dr Carl T. Brighton
Project: Significance of Tissue Oxygen Tension, Glycolysis and Mitochondrial Calcium Release in Epiphyseal Plate Calcification

Researcher(s): Dr Edward D. Harris, Jr, and Dr Peter A. McCroskery, MS
Project: Degradation of Human Cartilage Collagen Fibrils by Rheumatoid Synovial Collagenase

Researcher(s): Dr. Frederic W. Rhinelander
Project: Circulation in Bone

1975 Winner(s)
Researcher(s): Dr David S. Howell, PhD, Dr David Simon, PhD, and Dr Julio C. Pita, PhD
Project: Role of Extracellular Matrix Vesicles in Initial Calcification of Healing Rachitic Cartilage

Researcher(s): Dr Jennifer Jowsey, PhD
Project: Morphological Studies of the Etiology and Treatment of Osteoporosis

Researcher(s): Dr Henry J. Mankin
Project: Metabolism of Articular Cartilage in Health and Disease

1976 Winner(s)
Researcher(s): Dr William H. Harris
Project: Post-Operative Thromboembolic Disease: The Results of a Concerted Attack on a Complex Problem

Researcher(s): Dr Augusto Sarmiento and Dr Loren Latta, P. Eng
Project: Factors Controlling the Behavior of Tibial Shaft Fractures--A Correlation of Laboratory and Clinical Studies
Researcher(s): Dr Augustus A. White, III, Dr Manohar M. Panjabi, PhD, Dr Edmund S. Crelin, PhD, and Dr Wayne O. Southwick
Project: A Quantitative Biomechanical Study of Fracture Repair

1977 Winner(s)
Researcher(s): Dr Frank R. Noyes and Dr Edward S. Grood, PhD
Project: Functional Properties of Knee Ligaments and Alterations Induced by Immobilization

Researcher(s): Dr Jacquelin Perry and Dr M. Mark Hoffer
Project: Pre and Post-Operative Studies of Muscle Activity in the Cerebral Palsied Child Using Dynamic Electromyography as an Aid in Planning Tendon Transfers

Researcher(s): Dr Aaron S. Posner, PhD
Project: The Relation of Synthetic Amorphus Calcium Phosphate to Bone Mineral Structure

1978 Winner(s)
Researcher(s): Dr Klaus E. Kuettner, PhD
Project: The Resistance of Cartilage to Normal and Neoplastic Invasion

Researcher(s): Dr. Robert W. Bright
Project: Surgical Correction of Partial Growth Plate Closure--Experience with 52 Children

Researcher(s): Dr John E. Kenzora, Dr Robert E. Steele, and Dr Zvi H. Yosipovitch
Project: Experimental Osteonecrosis of the Femoral Head in Adult Rabbits

1979 Winner(s)
Researcher(s): Dr Adele L. Boskey, PhD
Project: Calcium Acidic Phospholipid Phosphate Complexes in Tissue Mineralization

Researcher(s): Dr William T. Green, Jr
Project: Articular Cartilage Repair: Investigation by the Cell Culture of Isolated Chonodrocytes

Researcher(s): Dr A. Seth Greenwald, PhD, and Dr Mary-Blair Matejczyk
Project: Comparative Mechanics of the Hip and Ankle

1980 Winner(s)
Researcher(s): Dr Thomas E. Whitesides, Jr, Dr Hiroshi Harada, and Dr Kazuo Morimoto
Project: Compartment Syndromes and the Role of Fasciotomy, its Parameters and Techniques

Researcher(s): Dr James A. Rand
Project: A Comparison of Open Intramedullary Nailing and Compression Plate Fixation on Fracture Site Blood Flow and Fracture Union

1981 Winner(s)
Researcher(s): Dr Van C. Mow, PhD, and Dr Cecil G. Armstrong, PhD
Project: Variations in the Intrinsic Mechanical Properties of Human Articular Cartilage with Age, Degeneration and Water Content

Researcher(s): Dr Marshall R. Urist
Project: New Bone Formation Induced in Post-Fetal Life by Bone Morphogenetic Protein"
**Researcher(s):** Dr Theodore R. Oegema, Jr, PhD  
**Project:** Proteoglycan Synthesis and Structure in Human and Rabbit Nucleus Pulposis: A Possible Relationship to Function

**Researcher(s):** Dr Wilson C. Hayes, PhD  
**Project:** Stress-Morphology Relationships in Trabecular Bone of the Patella

**1982 Winner(s)**

**Researcher(s):** Dr H. Clark Anderson  
**Project:** Matrix Vesicle Calcification

**Researcher(s):** Dr Gary E. Friedlaender  
**Project:** Apropos Bone Allografts

**Researcher(s):** Dr Alfred B. Swanson  
**Project:** Bone Remodeling Phenomena in Flexible (Silicone) Implant Arthroplasty in the Hand--Long Term Study

**Researcher(s):** Dr Richard A. Brand, Dr Roy D. Crowninshield, PhD, and Richard C. Johnston  
**Project:** Muscle and Joint Force Predictions and Their Uses

**1983 Winner(s)**

**Researcher(s):** Dr Savio L-Y Woo, PhD  
**Project:** Internal Fixation Plates for Fracture Management-New Design Concepts

**Researcher(s):** Dr William J. Landis, PhD  
**Project:** Studies of Mineralizing Tissues Using Anhydrous Techniques for Electron Optical and Microprobe Analysis

**Researcher(s):** Dr Robert H. Fitzgerald, Jr  
**Project:** The Pharmacokinetics of Antibiotics in Normal and Osteomyelitic Bone

**Researcher(s):** Dr Thomas P. Andriacchi, PhD  
**Project:** Interaction Between Knee Joint Mechanics and Patient Function Following Total Knee Replacement

**1984 Winner(s)**

**Researcher(s):** Dr Michael G. Ehrlich  
**Project:** Degradative Enzyme Systems in Cartilage

**Researcher(s):** Dr Raymond T. Morrissy and Dr Darrel W. Haynes, PhD  
**Project:** Acute Hematogenous Osteomyelitis: A Model with Trauma as an Etiologic Agent

**Researcher(s):** Dr Kai-Nan An, Ph.D., Dr. Edmund Y.S. Chao, Ph.D., Dr. William P. Cooney, III, and Dr. Ronald L. Lincheid  
**Project:** Biomechanics of the Hand--A Basic Research Study

**Researcher(s):** Dr R. William Petty  
**Project:** Influence of Skeletal Implant Materials on Infection
1985 Winner(s)
Researcher(s): Dr Richard H. Gelberman and Dr Paul R. Manske
Project: Flexor Tendon Repair

Researcher(s): Dr Clinton T. Rubin, PhD
Project: The Osteoregulatory Nature of Mechanical Stimuli

Researcher(s): Dr Christopher H. Evans, PhD
Project: Ferrographic and Biochemical Studies on the Wear Particles of Human and Prosthetic Joints

Researcher(s): Dr Victor M. Goldberg, Dr E. Power, Dr John W. Shaver, Dr Jaclyn M. Zika, PhD, Dr Gary Bos, and Dr Kingsbury G. Heiple
Project: Bone Grafting: The Barrier to Transplantation

1986 Winner(s)
Researcher(s): Dr Bruce Heppenstall, Dr Alexander Saepa, and Dr Bruce Chance, PhD
Project: Intracellular Energy Metabolism During Ischemia and Skeletal Muscle under Various Clinical Conditions with Articular Reference to 31P-NMR Spectroscopy as a New Investigative Diagnostic Technique

Researcher(s): Dr Andrew J. Weiland
Project: Fate of Vascularized Bone Grafts

Researcher(s): Dr Edith R. Schwartz, PhD
Project: Phosphorylation of Proteoglycans and Link Proteins in Human Articular Cartilage

Researcher(s): Dr William F. Blair, Dr Thomas D. Brown, PhD, and Dr E.R. Greene, PhD
Project: Pulsed Ultrasound Doppler Velocimetry in the Assessment of Microvascular Hemodynamics

1987 Winner(s)
Researcher(s): Dr Alan R. Hargens, PhD, Dr Wayne H. Akeson, and Dr Scott J. Mubarak
Project: Tissue Fluid Pressures: From Basic Research Tools to Clinical Application

Researcher(s): Dr. Steven P. Arnoczky, DVM
Project: The Meniscus: Its Repair and Replacement

Researcher(s): Dr Robert B. Salter
Project: The Biological Concept of Continuous Passive Motion of Synovial Joints: The First 16 Years of Basic Research and its Clinical Application

Researcher(s): Dr Jane B. Lian, PhD
Project: Osteocalcin: Properties, Synthesis, and Role in Bone Resorption

1988 Winner(s)
Researcher(s): Dr David L. Butler, PhD
Project: The Anterior Cruciate Ligament: Its Normal Response and Replacement Institution

Researcher(s): Dr Steven L. Teitelbaum
Project: The Cellular Mechanisms of Bone Resorption

Researcher(s): Dr Peter Grigg, PhD and Dr Allen H. Hoffman, PhD
Project: Neuronal Mechanoceptors as a Probe for Tissue Mechanics

1989 Winner(s)

**Ann Doner Vaughn Award**
Researcher(s): Timothy M. Wright, PhD, Donald L. Bartel, PhD, and Clare M. Rimnac, PhD
Project: Surface Damage in Polyethylene Total Joint Components

**Elizabeth Winston Lanier Award**
Researcher(s): Anthony R. Poole, PhD, Carolyn Webber, MSC, Henry J. Mankin, MD, Subhash Pal, PhD, and Lawrence C. Rosenberg, MD
Project: Protoglycans of Human Chondrosarcomas: Immunoanalysis Using Monoclonal Antibodies to Keratan Sulfate and A Fetal-Associated Epitope

**Young Investigator Award**
Researcher(s): Stephen B. Tripple, MD
Project: Growth Factor Regulation of Cartilage

1990 Winner(s)

**Ann Doner Vaughn Award**
Researcher(s): Ernesto Canalis, MD
Project: The Role of Insulin-Like Growth Factor in the Local Regulation of Bone Remodeling

**Elizabeth Winston Lanier Award**
Researcher(s): Arnold I. Caplan, PhD
Project: Mesenchymal Stem Cells

**Young Investigator Award**
Researcher(s): Steven A. Goldstein, PhD, and Larry S. Matthews, MD
Project: The Mechanical, Morphologic, Architectural and Remodeling Characteristics of Trabecular Bone

1991 Winner(s)

**Ann Doner Vaughn Award**
Researcher(s): Stanley J. Bigos, MD
Project: A Longitudinal Prospective Study of Industrial Back Injury Reporting

**Elizabeth Winston Lanier Award**
Researcher(s): A.H. Reddi, PhD
Project: Purification, Cloning and Expression of Osteogenin, A Protein Initiator of Bone Differentiation

**Young Investigator Award**
Researcher(s): W.P. Andrew Lee, MD
Project: Toward Clinical Realization of Vascularized Limb Tissue Allografts
1992 Winner(s)

**Ann Doner Vaughn Award**  
**Researcher(s):** Linda J. Sandell, PhD  
**Project:** Expression of Collagen and Aggrecan Genes During Skeletal Development and Growth: Control at Transcription and Post-transcription

**Elizabeth Winston Lanier Award**  
**Researcher(s):** Louis V. Avioli, MD  
**Project:** A New Post Receptor Signalling Pathway for Parathyroid Hormone in the Osteoblast

**Young Investigator Award**  
**Researcher(s):** Sharon Stevenson, DVM, PhD  
**Project:** Critical Biological Determinants of Cortical Bone Allograft Incorporation: Quantifying a Complex Process and Structure

1993 Winner(s)

**Ann Doner Vaughn Award**  
**Researcher(s):** J. Grodzinsky, ScD

**Elizabeth Winston Lanier Award**  
**Researcher(s):** Gary S. Stein, PhD, and Jane B. Lian, PhD  
**Project:** Molecular Mechanisms Regulating Osteoblast Growth and Differentiation

**Young Investigator Award**  
**Researcher(s):** D. Rick Sumner, PhD, Thomas M. Turner, MD, Robert M. Urban, MD and Jorge O. Galante, MD

1994 Winner(s)

**Ann Doner Vaughn Award**  
**Researcher(s):** James R. Urbaniak, MD, Anthony V. Seaber, and Long-En Chen, PhD  
**Project:** Blood No Reflow in Skeletal Muscle After Replantation

**Elizabeth Winston Lanier Award**  
**Researcher(s):** Robert J. Johnson, MD, Bruce D. Boynon, PhD, Braden C. Fleming, MS, Claude E. Nichols, MD, Per A. Renstrom, MD, PhD, Malcolm H. Pope, MD, SC, PhD, and James G. Howe, MD  
**Project:** The Biomechanics of the Anterior Cruciate Ligament and Bone-Patella Tendon-Bone Graft in Vivo

**Young Investigator Award**  
**Researcher(s):** Richard L. Lieber, PhD, and Jan Friden, MD, PhD  
**Project:** Mechanism and Prevention of Skeletal Muscle Injury
1995 Winner(s)

**Ann Doner Vaughn Award**
**Researcher(s):** John M. Cavanaugh, MS, A. Cuneyt Ozataktay, MD, Toshihiko Yamahita, MD, Avram Avramov, MD, Thomas V. Getchell, PhD, and Albert I. King, PhD
**Project:** Mechanisms of Low Back Pain: A Neurophysiological and Neuroanatomical Study

**Elizabeth Winston Lanier Award**
**Researcher(s):** Randy N. Rosier, Regis J. O'Keefe, David G. Hicks, Paul R. Reynolds, and J. Edward Puzas
**Project:** Autocrine Regulation of Cartilage

**Young Investigator Award**
**Researcher(s):** Stephen P. Horowitz, MD
**Project:** The Biology of Aseptic Loosening of the Cemented Arthroplasty: An In-Vitro Study

1996 Winner(s)

**Ann Doner Vaughn Award**
**Researcher(s):** Malcolm H. Pope, PhD, Marianne Magnusson, and David G. Wilder, PhD
**Project:** Low Back Pain and Whole Body Vibration

**Elizabeth Winston Lanier Award**
**Researcher(s):** Kathryn G. Vogel, Stephen P. Evanko, and James R. Robbins, MD
**Project:** What Proteoglycan Content Says About the Medical History of Tendon

**Young Investigator Award**
**Researcher(s):** Jon J.P. Warner, MD, Richard E. Debski, and Freddie H. Fu, MD
**Project:** A Dynamic Model for Motion and Stability of the Glenohumeral Joint

**OREF Clinical Research Award**
**Researcher(s):** Dale M. Daniel, Donald C. Fithian, Mary Lou Stone, Barbara E. Dobson, William F. Luetzow, MD, and Kenton R. Kaufman
**Project:** A Ten-Year Prospective Outcome Study of the ACL-Injured Patient

1997 Winner(s)

**Ann Doner Vaughn Award**
**Researcher(s):** William E. Garrett, MD, Anthony V. Seaber, Thomas M. Best, Richard R. Glisson, Pantelis K. Nikolaou, MD, and Dean C. Taylor, MD
**Project:** Muscle Strain Injury: Basic Science and Clinical Application

**Elizabeth Winston Lanier Award**
**Researcher(s):** James N. Weinstein, DO, MS, Kevin F. Spratt, G.F. Gebhart, Mamoru Kawakami, MD, Stephen T. Meller, Nobuhior Hayashi, Hwanmo Lee, and Ken-Inchi Chatani
**Project:** Lumbar Radiculopathy: An Animal Model with Relevance to Clinical Practice

**Young Investigator Award**
**Researcher(s):** Denis R. Clohisy, MD
**Project:** Cellular Mechanisms of Tumor Osteolysis
OREF Clinical Research Award
Researcher(s): Dale M. Daniel, Marc F. Swiontkowski, MD, Diane Martin, Ruth Engelberg, and Julie Agel
Project: The Development and Validation of a Musculoskeletal Extremity Health Status Instrument: The Musculoskeletal Functional Assessment Instrument

1998 Winner(s)

Ann Doner Vaughn Award
Researcher(s): Henry A. McKellop, PhD
Project: Development of an Extremely Wear Resistant Ultra High Molecular Weight Polyethylene for Total Hip Replacements

Elizabeth Winston Lanier Award
Researcher(s): Bruce Caterson, PhD
Project: The Use of Monoclonal Antibody Technology to Study Cartilage in Health and Disease: A Retrospective and Historical Review

Young Investigator Award
Researcher(s): Farshid Guilak, PhD
Project: The Biomechanics of the Chondrocyte in Articular Cartilage

OREF Clinical Research Award
Researcher(s): Stuart L. Weinstein, MD
Project: Natural History and Long-Term Outcomes of Treatment of Pediatric Orthopaedic Conditions

1999 Winner(s)

Ann Doner Vaughn Award
Researcher(s): Julia Bridge
Project: A Genetic Approach to Bone and Soft Tissue Tumors

Elizabeth Winston Lanier Award
Researcher(s): Thomas Einhorn, MD
Project: A Model of Experimental Fracture Healing for Basic and Applied Research

Young Investigator Award
Researcher(s): Scott Boden, MD
Project: The Biology of Lumbar Spine Fusion and the Use of Bone Graft Substitutes: Present, Future, and Next Generation...

OREF Clinical Research Award
Researcher(s): Andrew L. Koman, MD, Thomas L. Smith, Zhongyu Li, Beth Paterson Smith
Project: Peripheral Microvascular Control Mechanisms

2000 Winner(s)

Ann Doner Vaughn Award
Researcher(s): L.E. Dahners, MD, and G.E. Lester, PhD
Project: On Changes in Length of Dense Collagenous Tissue: Growth and Contracture
Elizabeth Winston Lanier Award
Researcher(s): R. Tracy Ballock, MD
Project: Regulation of Endochondral Ossification by Thyroid Hormone

Young Investigator Award
Researcher(s): Qian Chen, PhD
Project: Molecular Regulation of Chondrocyte Differentiation

OREF Clinical Research Award
Researcher(s): Benjamin A. Alman, MD, and Jay S. Wunder, MD
Project: Developmental Pathways in Musculoskeletal Neoplasia: Aggressive Fibromatosis and the Wingless (Wnt) Pathway

2001 Winner(s)

Ann Doner Vaughn Award
Researcher(s): Scott P. Bruder, MD, PhD
Project: Bone Generation and Regeneration: From Embryonic Chicks to Human Clinical Therapy

Elizabeth Winston Lanier Award
Researcher(s): Myron Spector, PhD
Project: Expression of Muscle Action in Contraction of Chondrocytes, Osteoblasts, and Musculoskeletal Tissue Fibroblasts

Young Investigator Award
Researcher(s): Robert L. Sah, MD, ScD
Project: Articular Cartilage Tissue Engineering: Biological and Biomechanical Foundations

OREF Clinical Research Award
Researcher(s): Bruce J. Sangeorzan, MD, Allan Tencer, PhD, and Randy Ching, PhD
Project: Changes in the Talo-Calcaneal Joint in Pathological Conditions in the Hindfoot

2002 Winner(s)

Ann Doner Vaughn Award
Researcher(s): Joshua J. Jacobs, MD; Anastasia K. Skipor, MD; Robert M. Urban; Nadim J. Hallab, PhD; Leslie Pattern, RN; and Jonathan Black, PhD
Project: Systemic Implications of Total Joint Replacement

Elizabeth Winston Lanier Award
Researcher(s): James G. Wright, MD; Gillian A. Hawker, MD; and Peter C. Coyte, PhD
Project: Area Variation and Unmet Need for Orthopaedic Surgical Procedures

Young Investigator Award
Researcher(s): Yousef Abu-Amer, PhD
Project: Regulation of Inflammatory Bone Loss Diseases: Unveiling Molecular Targets for Therapeutic Intervention

OREF Clinical Research Award
Researcher(s): Joseph D. Zuckerman, MD; and Kenneth J. Koval, MD
2003 Winner(s)

**Ann Doner Vaughn Award**
**Researcher(s):** Michael J. Bosse, MD; Ellen J. MacKenzie, PhD; James F. Kellam, MD; Andrew R. Burgess, MD; Lawrence Webb, MD; Marc F. Swiontkowski, MD; Roy Sanders, MD; Alan L. Jones, MD; Mark P. McAndrew, MD; Brendan M. Patterson, MD; Melissa McCarthy, ScD; Thomas G. Travison, PhD; Renan C. Castillo, MS
**Project:** Limb Salvage or Amputation Following Severe Lower Extremity Trauma: The LEAP Study

**Elizabeth Winston Lanier Award**
**Researcher(s):** Clinton T. Rubin, PhD
**Project:** Revisiting Wolff's Law: The Physiologic Basis and Anabolic Potential of Low Magnitude, High Frequency Mechanical Signals

**Young Investigator Award**
**Researcher(s):** Edward M. Greenfield, PhD; Yanming Bi, PhD; Ashraf A. Ragab, MD; Victor M. Goldberg, MD; Jennifer L. Nalepka, BS; Joscelyn M. Seabold, MS
**Project:** Does Endotoxin Contribute to Aseptic Loosening?

**OREF Clinical Research Award**
**Researcher(s):** John J. Callaghan, MD; Douglas R. Pedersen, PhD; Richard C. Johnston, MD; Thomas D. Brown, PhD
**Project:** The Clinical Biomechanics of Wear in Total Hip Arthroplasty

2004 Winner(s)

**Ann Doner Vaughn Award**
**Researcher(s):** Brian D. Snyder, MD, PhD; John A. Hipp, PhD; Ara Nazarian, MSc
**Project:** Non-Invasive Prediction of Fracture Risk Due to Benign and Metastatic Skeletal Defects

**Elizabeth Winston Lanier Award**
**Researcher(s):** Joseph S. Torg, MD; Helene Pavlov, MD; Albert Burstein, PhD
**Project:** The Pathomechanics, Pathophysiology, and Prevention of Reversible and Irreversible Cervical Spinal Cord Injury: Results of a Thirty-Year Clinical Experience

**Young Investigator Award**
**Researcher(s):** Johnny Huard, PhD
**Project:** Gene Therapy and Tissue Engineering Based on Muscle-Derived Stem Cells: Potential for Musculoskeletal Tissue Regeneration and Repair

**OREF Clinical Research Award**
**Researcher(s):** Frank R. Noyes, MD; Edward Grood, PhD; Thomas Andriacchi, PhD; Sue Barber-Westin, BS
**Project:** Factors Affecting the Treatment of Anterior Cruciate Ligament-Deficient Knees with Lower Limb Malalignment and Associated Ligamentous Instabilities: A Correlated, Clinical, Biomechanical, and Dynamic Gait Analysis
2005 Winner(s)

**Young Investigator Award**
*Researcher(s):* Edward M. Schwarz, PhD  
*Project:* Utility of Recombinant Adeno-Associated Virus Vectors for Orthopaedic Gene Therapy

**Elizabeth Winston Lanier Award**
*Researcher(s):* Darryl D. D'Lima, MD; Martin K. Lotz, MD; Clifford Colwell, Jr., MD  
*Project:* Cartilage Injury Chondrocyte Apoptosis and Matrix Degradation: In Vitro, In Vivo, and Clinical Consequences

**Ann Doner Vaughn Award**
*Researcher(s):* Paul D. Robbins, PhD; Steven C. Ghivizzani, PhD  
*Project:* Gene Delivery Approaches to the Treatment of Orthopaedic Disorders

**OREF Clinical Research Award**
*Researcher(s):* Mininder S. Kocher, MD, MPH; David Zurakowski, PhD; James R. Kasser, MD  
*Project:* Septic Arthritis of the Hip in Children: An Evidenced-Based Approach to Improving Clinical Effectiveness

2006 Winner(s)

**Young Investigator Award**
*Researcher(s):* Ranjan Gupta, MD  
*Project:* Schwann Cell Regulation of Chronic Nerve Injury

**Elizabeth Winston Lanier Award**
*Researcher(s):* Kristy Weber, MD, Michele Doucet, MS, Scott Kominsky, PhD  
*Project:* Growth Factor Receptor Signaling Blockade in Renal Cell Carcinoma Bone Metastasis

**Ann Doner Vaughn Award**
*Researcher(s):* Tong-Chuan, He, MD, PhD, Rex C. Haydon, MD, PhD  
*Project:* The Distinct Roles of Bone Morphogenetic Proteins in Mesenchymal Stem Cell Differentiation

**OREF Clinical Research Award**
*Researcher(s):* Kevin J. Bozic, MD, MBA, Patricia Katz, PhD, Jonathan Showstack, PhD, James Naessens, MPH, Harry E. Rubash, MD, Michael D. Ries, MD, Daniel J. Berry, MD  
*Project:* Using Clinical and Economic Outcome Data to Influence Health Policy in the United States: The Case of Total Joint Replacement

2007 Winner(s)

**Young Investigator Award**
*Researcher(s):* Constance R. Chu, MD  
*Project:* Integrating Bench to Operating Room: Journey of a Clinician-Scientist

**Elizabeth Winston Lanier Award**
*Researcher(s):* Martha L. Gray, PhD, Deborah Burstein, PhD, Young-Jo Kim MD, PhD, Alice Maroudas, PhD
Project: Magnetic Resonance Imaging of Cartilage Glycosaminoglycan: Basic Principles, Imaging Technique, and Clinical Applications

Ann Doner Vaughn Award
Researcher(s): David L. Butler, PhD, Natalia Juncosa-Melvin, Ph.D, Gregory P. Boivin, D.V.M., Marc T. Galloway, M.D., Jason T. Shearn, Ph.D., Cynthia Gooch, B.S., Hani Awad, Ph.D.
Project: Functional Tissue Engineering for Tendon Repair: A Multidisciplinary Strategy using Mesenchymal Stem Cells, Bioscaffolds and Mechanical Stimulation

OREF Clinical Research Award
Researcher(s): Christian Gerber, MD, FRCSEd(hon)
Project: Rotator Cuff Disease: From Scientific Understanding to Patient Care

2008 Winner(s)

Young Investigator Award
Researcher(s): Chuan-ju Liu, PhD; Yi Luan, MD, PhD; Yan Zhang, MD, PhD; Ronald Damani Howell, BS; and Li Kong, MD
Project: ADAMTS-7 and ADAMTS-12: Two Novel Cartilage-Degrading Metalloproteinases

Elizabeth Winston Lanier Award
Researcher(s): Michele C. Battie, PhD; Tapio Videman, MD, PhD; Jaakko Kaprio, MD, PhD; Laura E. Gibbons, PhD; Kevin Gill, MD; Janna Saarela, MD, PhD; and Leena Peltonen, MD, PhD
Project: The Foundation of a New Paradigm of Disc Degeneration: The Twin Spine Study

Ann Doner Vaughn Award
Researcher(s): Karen M. Lyons, PhD and Vicki Rosen, PhD
Project: In Vivo Studies of BMP Pathway Activities in Chondrogenesis

OREF Clinical Research Award
Researcher(s): Hans-Christoph Pape, MD
Project: Effects of Changing Strategies of Fracture Fixation on Immunologic Changes and Systemic Complications After Multiple Trauma: Damage Control Orthopaedic Surgery

2009 Winner(s)

Young Investigator Award
Researcher(s): Stavros Thomopoulos, PhD
Project: Structure, Biomechanics, and Mechanobiology in the Attachment of Tendon to Bone

Elizabeth Winston Lanier Award
Researcher(s): Michael J. Yaszemski, MD, PhD and Lichun Lu, PhD
Project: Osteoinductive Injectable Degradable Polymeric Scaffolds for Osseous Defect Repair

Ann Doner Vaughn Award
Researcher(s): Hiroshi Kawaguchi, MD, PhD, Toru Akune, MD, PhD, Takashi Yamada, MD, PhD and Naoshi Ogata, MD, PhD
Project: Mouse Genetics Studies on Molecular Mechanisms Underlying Bone and Cartilage Disorders

OREF Clinical Research Award
Researcher(s): Lawrence C. Hurst, MD, Marie A. Badalamente, PhD and Edward D. Wang, MD
**Project:** Injectable Clostridial Collagenase: Striving Toward Nonoperative Treatment Options for Fibroproliferative Disorders

**2010 Winner(s)**

**Young Investigator Award**
Researcher(s): Brian K. Kwon, MD, PhD, FRCSC  
Project: Cerebrospinal Fluid Pressure Monitoring and Biochemical Analysis in Acute Spinal Cord Injury - A Translational Approach

**Elizabeth Winston Lanier Award**
Researcher(s): Cornelia E. Farnum, DVM, PhD  
Co-Author: Norman J. Wilsman, DVM, PhD  
Project: Analyzing the Growth Plate in Four Dimensions - A Thirty-year Perspective on Growth Plate Dynamics

**Ann Doner Vaughan Award**
Researcher(s): Louis J. Soslowsky, PhD  
Project: Understanding the Etiology, Pathogenesis, and Repair Response of Rotator Cuff Injuries: A Series of Interconnected Studies Developing and Using an Animal Model

**OREF Clinical Research Award**
Researcher(s): Mohit Bhandari, MD  
Co-Authors: Gordon Guyatt, Stephen Walter, Emil Schemitsch, Dave Sanders, Marc Swiontkowski, and Paul Tornetta, III  
Project: Setting a New Benchmark for Collaborative Trials in Trauma: The Rationale, Design, and Execution of the Study to Prospectively Evaluate Intramedullary Nails in Tibial Shaft Fractures (S.P.R.I.N.T.)

**2011 Winner(s)**

**Young Investigator Award**
Researcher(s): Young-Min Kwon, MD, PhD, FRCS, FRACS  
Project: Evidence-Based Approach in Understanding 'Pseudotumour' in Metal-on-Metal Hip Replacements

**Elizabeth Winston Lanier Award**
Researcher(s): Howard S. An, MD  
Co-Authors: Koichi Masuda, MD; Gabriella Cs-Szabo, PhD; Yejia Zhang, MD, PhD; Ana Chee, PhD; Gunnar B.J. Andersson, MD, PhD; Hee-Jeong Im, PhD; Eugene J-M.A. Thonar, PhD  
Project: Intervertebral Disc Repair or Regeneration by Growth Factor and/or Cytokine Inhibitor Protein Injection

**Ann Doner Vaughan Award**
Researcher(s): Bang H. Hoang, MD  
Co-Authors: Yi Guo, MD; Randall F. Holcombe, MD; Xiaolin Zi, MD  
Project: Project: Toward Novel Therapeutic Intervention for Osteosarcoma: Clinical Implications of the WNT Pathway
OREF Clinical Research Award
Researcher(s): Donald D. Anderson, PhD
Co-Authors: J. Lawrence Marsh, MD; Thomas D. Brown, PhD
Project: The Pathomechanical Etiology of Post-traumatic Osteoarthritis Following Intra-articular Fractures

2012 Winner(s)

Young Investigator Award
Researcher(s): Xudong Joshua Li, MD, PhD
Project: GDF5 Modulation in Intervertebral Disc Degeneration

Elizabeth Winston Lanier Award
Researcher(s): Jay R. Lieberman, MD
Project: Regional Gene Therapy to Enhance Bone Repair

Ann Doner Vaughan Award
Researcher(s): Kurt P. Spindler, MD
Co-Authors: Richard D. Parker, MD, Jack T. Andrish, MD, Christopher C. Kaeding, MD, Rick W. Wright, MD, Robert G. Marx, MD, MSc, Eric C. McCarty, MD, Annunziato Amendola, MD, Warren R. Dunn, MD, MPH, Laura J. Huston, MS, Frank E. Harrell, Jr., PhD
Project: Prognosis and Predictors of ACL Reconstructions using the MOON Cohort: A Model for Comparative Effectiveness Studies

OREF Clinical Research Award
Researcher(s): Thomas D. Brown, PhD
Co-Authors: Jacob M. Elkins, MS, Douglas R. Pedersen, PhD, John J. Callaghan, MD
Project: Impingement and Dislocation in Total Hip Arthroplasty: Mechanisms and Consequences

2013 Winner(s)

Young Investigator Award
Researcher(s): Elise F. Morgan, PhD
Project: Control of Bone Healing by Mechanical Factors

Elizabeth Winston Lanier Award
Researcher(s): Richard L. Lieber, PhD
Co-Authors: Samuel R. Ward, PT, PhD, Jan Friden, MD, PhD
Project: Design of Human Skeletal Muscles: Implications For Orthopaedic Surgery

Ann Doner Vaughan Award
Researcher(s): Martha M. Murray, MD
Co-Author: Braden C. Fleming, PhD
Project: The Biology of ACL Injury and Repair

OREF Clinical Research Award
Researcher(s): Robert F. LaPrade, Md, PhD
Co-Authors: Steinar Johansen, MD, Lars Engebretsen, MD, PhD, Chad J, Griffith, MD / Benjamin R. Coobs, MD, Andrew G. Geeslin, MD
Project: Improving Outcomes for Posterolateral Knee Injuries Running Title: The Posterolateral Corner of the Knee

2014 Winner(s)

Young Investigator Award
Researcher(s): Brian Feeley, MD
Project: Understanding the development of muscle atrophy and fatty infiltration in massive rotator cuff tears

Elizabeth Winston Lanier Award
Researcher(s): Freddie H. Fu, MD
Project: Anatomic Anterior Cruciate Ligament Reconstruction: A Changing Paradigm

Ann Doner Vaughan Award
Researcher(s): Ken Yamaguchi, MD, MBA
Co-Authors: Sharlene A. Teefey, MD, Jay D. Keener, MD, Leesa Galatz, MD
Project: Natural History of Rotator Cuff Disease: Relationship to Surgical Indications

OREF Clinical Research Award
Researcher(s): James N. Weinstein, MD, MS
Co-Authors: Adam M. Pearson, MD, MS, Jon D. Lurie, MD, MS, Tor D. Tosteson, ScD, Anna N.A. Tosteson, ScD, William A. Abdu, MD, MS, Sohail K. Mirza, MD, MPH
Project: The Spine Patient Outcomes Research Trial (SPORT)

2015 Winner(s)

Young Investigator Award
Researcher(s): Robert L. Mauck, PhD
Co-Authors: Dawn M. Elliott, PhD and Jason A. Burdick, PhD
Project: Engineering Dense Connective Tissues: Mechanical, Material, and Mechanobiologic Considerations

Ann Doner Vaughn Award
Researcher(s): Steven A. Olson, MD
Co-Authors: Farshid Guilak, PhD, Virginia Kraus, MD, PhD, Bridgette Furman, BS, and Janet Huebner, MS
Project: Early Inhibition of Proinflammatory Cytokines Prevents Post-Traumatic Arthritis: Insights from the Natural History of Arthritis Developing after Intra-Articular Fracture
More on the winners

Elizabeth Winston Lanier Award
Researcher(s): William D. Bugbee, MD
Co-Authors: Andrea L. Pallante-Kichura, PhD, Simon Görtz, MD, Robert Sah, MD, ScD, and David Amiel, PhD
Project: Osteochondral Allograft Transplantation in Cartilage Repair: Graft Storage Paradigm, Translational Models, and Clinical Applications
More on the winners
OREF Clinical Research Award
Researcher(s): Stuart L. Weinstein, MD
Co-Authors: Lori A. Dolan, PhD
Project: The Evidence Base for the Prognosis and Treatment of Adolescent Idiopathic Scoliosis

2016 Winner(s)

Young Investigator Award
Researcher: Louis DeFrate, ScD
Project: The effects of ACL graft placement on in vivo knee function and cartilage thickness distributions

Ann Doner Vaughn Award
Researcher: Francis Lee, MD, PhD
Project: Targeting Innate Immune Inflammatory Pathways in Osteolytic Disorders: Unmasking the Two Faces of Osteoprogenitor Cells

Elizabeth Winston Lanier Award
Researcher: Edward Wojtys, MD
Co-Author: James A. Ashton-Miller, PhD
Project: On Knee Function and ACL Injury

OREF Clinical Research Award
Researcher: Timothy Hewett, PhD
Co-Authors: Gregory D. Myer, PhD; Kevin R. Ford, PhD; Mark Paterno, PhD; Carmen Quatman, MD, PhD
Project: Mechanisms and Prevention of ACL Injuries: Cutting ACL Injury Risk with Finely Sharpened Tools

2017 Winners

Kappa Delta Young Investigator Award
Researcher: Robin Queen, PhD, FACSM
Project: Using Lower Extremity Biomechanics in Patients with Ankle Osteoarthritis and Ankle Arthroplasty to Direct Clinical Care

Kappa Delta Ann Doner Vaughn Award
Researcher: Matthew Dobbs, MD
Co-Author: Christina Gurnett, MD, PhD
Project: Advancing Mrecision Medicine for Clubfoot Treatment through Basic Research

Kappa Delta Elizabeth Winston Lanier Award
Researcher: Scott W. Wolfe, MD
Co-Author: Joseph J. Crisco, III, PhD
Project: Kinematics of the Normal and Injured Wrist: The Importance of the Midcarpal Joint

OREF Clinical Research Award
Researcher: Henrik Malchau, MD, PhD
Co-Authors: Göran Garellick, MD, PhD; Daniel Berry, MD; William H. Harris, MD, ScD
Project: Arthroplasty Implant Registries Over The Past Five Decades: Development, Current and Future Impact
2018 Winners

Kappa Delta Young Investigator Award
Researcher: Nelly Andarawis-Puri, PhD
Co-Author: Evan L. Flatow, MD
Project: Promoting Effective Tendon Healing and Remodeling

Kappa Delta Ann Doner Vaughn Award
Researcher: Johnny Huard, PhD
Project: Adult Stem Cells, Blood Vessels, and Angiogenesis: Major Determinants for Musculoskeletal Tissue Repair After Injury, Disease, and Aging

Kappa Delta Elizabeth Winston Lanier Award
Researcher: Paul E. Beaulé, MD, FRCSC
Co-Authors: George Grammatopoulos, MD, FRCS, PhD; Andrew Speirs, PhD; Geoffrey Ng, PhD; Sasha Carsen, MD; Hanspeter Frei, PhD; Gerd Melkus, PhD; Kawan Rakhra, MD; Mario Lamontagne, PhD
Project: Unravelling the Hip Pistol Grip / CAM Deformity: Origins to Joint Degeneration

OREF Clinical Research Award
Researcher: Gregory B. Maletis, MD
Co-Authors: Tadashi T. Funahashi, MD; Maria C.S. Inacio, PhD; Liz Paxton, MA
Project: Optimizing Anterior Cruciate Ligament Reconstruction: Individualizing the Decision Making Process Using Data from the Kaiser Permanente ACLR Registry

2019 Winners

Kappa Delta Young Investigator Award
Researchers: Sherry Liu, PhD
Co-Authors: Chantal M. de Bakker, PhD and Yihan Li, MS
Project: Understanding Functional Adaptation of Maternal Bone to Reproduction and Lactation

Kappa Delta Ann Doner Vaughn Award
Researchers: Rick Wright, MD
Co-Authors: Amanda K. Haas, MA, Christina R. Allen, MD, Daniel E. Cooper, MD, Thomas M. DeBerardino, MD, Michael J. Stuart, MD, Brett A. Lantz, MD, Kurt P. Spindler, MD, and MARS Group
Project: Predictors of Clinical Outcome Following Revision Anterior Cruciate Ligament Reconstruction

Kappa Delta Elizabeth Winston Lanier Award
Researchers: Constance R. Chu, MD
Co-Authors: Ashley A. Williams, MS, Jennifer C. Erhar-Hledik, PhD, Matthew R. Titchenal, PhD, Yongxian Qian, PhD, and Thomas P. Andriacchi, PhD
Project: Visualizing Pre-Ostearthritis: Integrating MRI UTET2*with Mechanics and Biology to Combat Post-Traumatic Osteoarthritis

OREF Clinical Research Award
Researchers: L. Andrew Koman, MD
Co-Authors: Beth Paterson Smith, PhD and Thomas L. Smith, PhD
Project: Musculoskeletal Uses of Botulinum Toxins: A 30 year Translational Journey at Wake Forest School of Medicine
2020 Winners

Kappa Delta Young Investigator Award
Researchers: Alice Huang, PhD
Co-Authors: Leesa Galatz, MD, Ronen Schweitzer, PhD
Project: Cell and molecular mechanisms of tendon development, regeneration, and scar formation

Kappa Delta Ann Doner Vaughn Award
Researchers: Marc Swiontkowski, MD
Co-Authors: Mohit Bhandari, MD, FAITH Steering Committee
Project: Finding Answers to the "Unsolved Fracture": A 10-year journey - The Rationale, Design, and Execution of the Fixation Alternatives in the Treatment of Hip Fractures

Kappa Delta Elizabeth Winston Lanier Award
Researchers: Carl Deirmengian, MD
Co-Authors: Keith Kardos, PhD
Project: The Discovery, Development, Characterization, and FDA Clearance of the Alpha-Defensin Test for Periprosthetic Joint Infection

OREF Clinical Research Award
Researchers: Braden C. Fleming, PhD
Co-Authors: Paul D. Fadale, MD, Michael J. Hulstyn, MD, Robert M. Slavoy, MD, Glenn A. Tung, MD, Gary J. Badger, MS
Project: Long-term Outcomes of ACL Reconstruction Surgery