

1. Record Nr.	UNINA9910710262503321
Autore	Berger Harold
Titolo	Technical activities 1981 Office of Nondestructive Evaluation / / Harold Berger; Leonard Mordfin
Pubbl/distr/stampa	Gaithersburg, MD : , : U.S. Dept. of Commerce, National Institute of Standards and Technology, , 1981
Descrizione fisica	1 online resource
Collana	NBSIR ; ; 82-2449
Altri autori (Persone)	BergerHarold MordfinLeonard
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	1981. Contributed record: Metadata reviewed, not verified. Some fields updated by batch processes. Title from PDF title page.
Nota di bibliografia	Includes bibliographical references.

2. Record Nr.	UNINA9910825228603321
Autore	Rana Abou-Khalil
Titolo	Experimental Research Methods in Orthopedics and Trauma // by: Simpson, Hamish, Augat, Peter
Pubbl/distr/stampa	Stuttgart, [Germany] : , : Thieme, , 2015 ©2015
ISBN	3-13-258147-X
Descrizione fisica	1 online resource (466 p.)
Disciplina	617.3
Soggetti	Orthopedics Musculoskeletal system Medicine - Research
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"257 illustrations."
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Experimental Research Methods in Orthopedics and Trauma; Title Page; Copyright; Contents; Foreword; Endorsement by the International Combined Orthopaedic Research Societies (I-CORS) Member Organizations; Preface; Acknowledgments; Contributors; 1 Why Do We Need Experimental Research?; 1 Evidence-Based Research; 2 Establishing a Basic Research Facility in Orthopedic Surgery; 3 Good Laboratory Practice and Quality Control; 4 How to Prepare for a Period in Research; 2 Structural Biomechanics; 5 Physiological Boundary Conditions for Mechanical Testing 6 Static, Dynamic, and Fatigue Mechanical Testing7 Use of Human and Animal Specimens in Biomechanical Testing; 8 Whole Bone Biomechanics; 9 Biomechanics of Trabecular and Cortical Bone; 10 Biomechanics of Fracture Fixation; 11 Biomechanical Assessment of Fracture Repair; 12 Biomechanics of Cartilage; 13 Biomechanics of Joints; 14 Spine Biomechanics; 3 Functional Biomechanics; 15 Musculokeletal Dynamics; 16 Measurement Techniques; 17 Clinical Assessment of Function; 18 Functional Biomechanics with Cadaver Specimens; 4 Numerical Biomechanics; 19 Inverse Dynamics 20 Principles of Finite Elements Analysis21 Validation of Finite Element Models; 22 Computational Biomechanics of Bone; 23 Numerical

Simulation of Implants and Prosthetic Devices; 24 Numerical Simulation of Fracture Healing and Bone Remodelling; 5 Imaging; 25 Micro-Computed Tomography Imaging of Bone Tissue; 26 Imaging Bone; 27 Ultrasound Techniques for Imaging Bone; 28 In Vivo Scanning; 29 Imaging of Cartilage Function; 30 Histochemistry Bone and Cartilage; 31 Immunohistochemistry; 32 Molecular Imaging In Situ Hybridization; 33 Laser Scanning Confocal Microscopy and Laser Microdissection 34 Image Analysis Histomorphometry Stereology6 Cellular Studies; 35 Cell Culture Research; 36 Cartilage Explants and Organ Culture Models; 37 Fluid Flow and Strain in Bone; 38 Biomechanics of Bone Cells; 7 Molecular Techniques in Bone Repair; 39 Molecular Testing; 40 Genetically Modified Models for Bone Repair; 8 In Vivo Models; 41 General Considerations for an In Vivo Model; 42 Animal Models for Bone Healing; 43 Models for Impaired Healing; 44 In Vivo Models for Bone and Joint Infections; 45 In Vivo Models for Articular Cartilage Repair; 46 In Vivo Soft Tissue Models; 9 Tissue Engineering 47 Scaffolds for Tissue Engineering and Materials for Repair48 Use of Growth Factors in Musculoskeletal Research; 49 Stem Cells for Musculoskeletal Repair; 50 Biological Evaluation and Testing of Medical Devices; 10 Statistics for Experimental Research; 51 Study Design; 52 Power and Sample Size Calculation; 53 Nonparametric versus Parametric Tests; 54 How to Limit Bias in Experimental Research; Index

Sommario/riassunto

From bioinformatics to nanotechnology, advances in basic research ultimately drive advances in clinical care. This book provides a comprehensive summary of all current research methodologies for translational and pre-clinical studies in biomechanics and orthopedic trauma surgery. With this roadmap at hand, specialists and trainees will have the tools to conduct high-quality experimental research in any area of musculoskeletal science, with a solid understanding of how the findings can be applied in patient care. Special Features: Utilizes the principles and methodology of modern, evidence-bas
