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CITIZENSHIP: United States of America

EDUCATION

INSTITUTION	DEGREE	YEAR(s)	FIELD OF STUDY
California State University, Long Beach	B.S.	1993-1997	Physical Therapy
University of Southern California	Ph.D.	1999-2003	Biokinesiology
University of California San Diego	Postdoc	2003-2006	Orthopaedic Surgery

VISITING SCHOLARSHIPS

Department	University	Dates
Biomechanical Engineering	Stanford, CA	August 2001 December 2006
Biological Anthropology	Duke University	June 2006 September 2006
Human Anatomy	University of Minnesota	March 2009
Orthopaedic Surgery	Balgrist Hospital/University of Zurich	Visiting Professor In Residence 2016/2017 Academic Year

LICENSES/CERTIFICATIONS/ PRIVILEGES

Description	State/Site	License #
Physical Therapist	California	23527
Research MRI Technologist	UCSD cFMRI	N/A
Intraoperative Laser Diffraction	1) UCSD- Thornton Hospital 2) Centinela-Freeman Medical Center 3) Shriner's Hospital for Children- Sacramento	N/A
CPR	AHA Healthcare Provider Exp 12/2020	

HIGH-VALUE PROFESSIONAL EXPERIENCE

Director of Translational Research, UC San Diego School of Medicine (2022-)

Med Tech Council Leadership
Science Research Park Committee- Programmatic Advisory Council
850,000 square feet of academic-commercial space
School of Medicine Strategic Plan Leadership Committee
Co-Director, Center for Human Performance Research, Institute of Engineering in Medicine
(2021- current)
Wu Tsai Human Performance Alliance, Leadership Council (2021-2031)
Director: Triton Center for Performance and Injury Science
Stanford/Edleman PR- Media Training
Founding Faculty Board Member, UC San Diego Chapter of the National Academy of Inventors
(2021-)
Director, Device Acceleration Center, UC San Diego CTSA (2020-)
Executive Team and Executive Council, UC San Diego CTSA (2021-)
UCSF Musculoskeletal P30 External Advisory Board (2020-)
Co-Chair, Department of Medicine Chair Search Committee, UC San Diego
Operation Walk Los Angeles, Board of Directors (2019- 2021)
San Diego Spine Foundation Board Member (2019-)
NIH (MRS) Standing Review Member (October 2019-)
Chair, MRS Study Section (July 2022-June 2024)
Health Sciences Space Committee, UC San Diego (2018-)
Health Leadership Academy, UC San Diego (2018)
Course Director, MSK Gross Anatomy, UC San Diego School of Medicine (2018-)
Chair, DoD CDMRP Discovery Award Scientific Review Panel (October 2017)
Consultant, Performance and Injury Prediction, San Diego Padres (10/2016-current)
Vice Chair of Research and Innovation, Department of Orthopaedic Surgery, University of
California San Diego (07/2015- current)
Co-Director, Center for Musculoskeletal Research, Institute of Engineering in Medicine,
University of California San Diego (08/2015-08/2018)
Affiliate Member, American Shoulder and Elbow Surgeons, American Academy of Orthopaedic
Surgeons (10/2015-current)
Chair, Department of Orthopaedic Surgery Research Advisory Committee (06/2014-current)
Chair, Department of Radiology Research Council (6/1/2013- 6/30/2014)
Member, UCSD School of Medicine, Research Council (08/2014-02/2019)

President, Section on Research, American Physical Therapy Association (2012-2014)
External Advisory Board, California State University San Diego Department of Physical Therapy (2012- current)
External Advisory Board, California State University Long Beach Department of Physical Therapy (2010- current)
Member, Center for Musculoskeletal Research, Institute of Engineering in Medicine (2008-current)
Core Director/Co-PI, National Skeletal Muscle Research Center (2005-2015)
Instructor of Clinical Physical Therapy, University of Southern California, Department of Biokinesiology and Physical Therapy (06/1998-06/1999),
Member, Operation Walk USA (1996-current)

ACADEMIC POSITIONS

Director of Translational Research- School of Medicine (01/03/2022-Current)
Professor, Departments of Orthopaedic Surgery, Radiology, and Bioengineering
Vice Chair of Research and Innovation- Orthopaedic Surgery
Director, Device Acceleration Center, Clinical Translational Research Institute
Co-Director, Wu Tsai Human Performance Alliance at UC San Diego
University of California San Diego

Professor (04/1/2020-12/31/21)
Departments of Orthopaedic Surgery, Radiology, and Bioengineering
Vice Chair of Research and Innovation- Orthopaedic Surgery
Director, Device Acceleration Center, Clinical Translational Research Institute
University of California San Diego

Professor (07/1/2015-Current)
Departments of Radiology, Orthopaedic Surgery, and Bioengineering
Vice Chair of Research- Orthopaedic Surgery
University of California San Diego

Faculty Member, Center for Functional Magnetic Resonance Imaging (2015-current)
Department of Radiology
University of California San Diego

Co-Director/Member- Center for Musculoskeletal Research (CMSR) (03/2015- 09/2018) and
Member- Biomaterials and Tissue Engineering Center (BMTEC) (2020- current)
Institute for Engineering in Medicine (IEM)
University of California San Diego

Interim Vice Chair of Research, Orthopaedic Surgery (06/2014 – 07/2015)

Associate Professor *In Residence* (07/2010 – 07/2015)

Departments of Radiology, Orthopaedic Surgery, and Bioengineering
University of California San Diego

Assistant Professor *In Residence* (07/2008- 06/2010)
Departments of Radiology, Orthopaedic Surgery, and Bioengineering
University of California San Diego

Assistant Professor *In Residence* (07/2007- 06/2010)
Departments of Radiology and Orthopaedic Surgery
University of California San Diego

Assistant Professor *In Residence* (03/2006- 07/2007)
Department of Radiology
University of California San Diego

Research Biologist (GS-9) (10/2003- 12/31/2010)
Department of Orthopaedic Surgery
VA Medical Center San Diego

PhD Student (08/1999-09/2003)
Department of Biokinesiology and Physical Therapy
University of Southern California

Lecturer (06/1999-08/1999)
Human Anatomy, Department of Physical Therapy, California State University, Long Beach,
Long Beach, CA.

HONORS AND AWARDS

Award	Year	Institution
Visiting Professor	2021	Airlangga University School of Medicine and Applied Sciences, Indonesia
Fellow	2021	American Institute for Medical and Biological Engineering (AIMBE)
Fellow	2018	American Physical Therapy Association
Steven J. Rose Visiting Professor	2018	Washington University in St. Louis
Visiting Professor	2017	UCLA Department of Orthopaedic Surgery
Marion Williams Career Achievement in Research Award	2017	American Physical Therapy Association
Publication of the year	2016	California Physical Therapy Association

Visiting Professor in Residence	2016-2017	University of Zurich/Balgrist Hospital
Member (1 of 10 scientists)	2016	American Shoulder and Elbow Surgeons
Eugene Michels Lecture	2016	American Physical Therapy Association
Visiting Professor	2014	UCSF Department of Orthopaedic Surgery
Charles Magistro Lecturer	2014	Arcadia University
Early Career Biomechanics Award in Biomechanics	2014	Biomechanics Interest Group, American Physical Therapy Association
Nominee-Kaiser Excellence in Teaching Award	2013	UC San Diego School of Medicine
Kappa Delta Award	2013	American Academy of Orthopaedic Surgeons
Distinguished Alumni	2012	Division of Biokinesiology and Physical Therapy, University of Southern California
Distinguished Alumni	2012	College of Health and Human Services, California State University Long Beach
Nominee-Kaiser Excellence in Teaching Award	2011	UC San Diego School of Medicine
Research Prize	2011	International Society for Study of the Lumbar Spine
Regional Finalist	2011	White House Fellowship Program
Faculty Publication of the Year Award	2009	California Chapter of the American Physical Therapy Association
Post-doctoral Scientist Award	2008	American Society of Biomechanics
Eugene Michels New Investigator Award	2008	American Physical Therapy Association
Order of the Golden Cane	2004	University of Southern California
Outstanding Service Award	2003	California State University Long Beach
Student Research Award	2003	California Physical Therapy Association
Student Research Award	2003	SCCB, American Society of Biomechanics
Promotion of Doctoral Studies (II) Award	2002-2003	American Physical Therapy Association

Jacquelin Perry Research Award	2001	University of Southern California
Promotion of Doctoral Studies (I) Award	2001-2002	American Physical Therapy Association
McMillan Scholar	1998	American Physical Therapy Association
Professional Student Award	1998	California State University Long Beach
Roger Greaves Scholar	1997	California State University Long Beach

PATENTS

- 1) US 2011/0208236 A1 Muscle Biopsy Clamp. Publication 08/25/2011
- 2) UCSD Case #2010-248, In Vivo Cartilage Compression Device, Utility Patent Pending
- 3) UCSD Invention Disclosure, Docket No. SD2017-276 (US Provisional Application Serial No. 62/507850, May 18, 2017). Extracellular matrix for treating skeletal muscle degeneration. (Christman, Ward, Alperin, Duran)

PEER-REVIEWED PUBLICATIONS

- 1) Salem GS, **Ward SR**, Lee TQ. Regulation of Plantar-Foot Kinetics During Exercises on Step Benches with Markedly Different Structural Properties. *J Strength Cond Res* 14(1), 2000.
- 2) **Ward SR**, Shellock FG, Terk MR, Salsich GB, Powers CM. Assessment of Patellofemoral Joint Relationships Using Magnetic Resonance Imaging: A Comparison of Qualitative and Quantitative Methods. *J Magn Reson Imaging*. 16(1), 69-74, 2002. (PMID: 12112505)
- 3) Powers CM, **Ward SR**, Fredericson M, Guillet M, Cooper C, Shellock FG. Patellar Kinematics During Weight-bearing and Non-Weight-bearing Knee Extension in Persons With Lateral Subluxation of the Patella: A Preliminary Study. **Cover story** *J Orthop Sports Phys Ther* 33(11), 677-685, 2003. (PMID: 14669963)
- 4) Salsich GB, **Ward SR**, Terk MR, Powers CM. In Vivo Assessment of Patellofemoral Joint Contact Area in Individuals Who Are Pain Free. *Clin Orthop* 417, 277-284, 2003. (PMID: 14646727)
- 5) Brechter JH, Powers CM, Terk MR, **Ward SR**, Lee TQ. Quantification of Patellofemoral Joint Contact Area Using Magnetic Resonance Imaging. *Magn Reson Imaging* (21)9, 955-959, 2003. (PMID: 14684196)

- 6) Powers CM, **Ward SR**, Chen YJ, Chan LD, Terk MR. The Effect of Bracing on Patellofemoral Joint Stress During Free and Fast Walking. *Am J Sports Med* 32(1), 224-231, 2004. (PMID: 14754748)
- 7) Powers CM, **Ward SR**, Chan LD, Chen YJ, Terk MR. The Effect of Bracing on Patellar Alignment and Patellofemoral Joint Contact Area. *Med Sci Sport Exer* 36(7), 1226-1232, 2004. (PMID: 15235330)
- 8) Powers CM, **Ward SR**, Chen YJ, Chan LD, Terk MR. The Effect of Bracing on Patellofemoral Joint Stress During Ascending and Descending Stairs. *Clin J Sport Med* 14(4), 206-214, 2004. (PMID: 15273526)
- 9) **Ward SR** and Powers CM. The Influence of Patella Alta on Patellofemoral Joint Stress During Normal and Fast Walking. *Clin Biomech* 19(10), 1040-1047, 2004. (PMID: 15531054)
- 10) Felder A, **Ward SR**, Lieber RL. Sarcomere Length measurement Permits High Resolution Normalization of Muscle Fiber Length in Architectural Studies. *J Exp Biol* 9(17), 3275-3279, 2005. (PMID: 16109889)
- 11) **Ward SR** and Lieber RL. Density and Hydration of Fresh and Fixed Human Skeletal Muscle. *J Biomech* 38(11), 2317-2320, 2005. (PMID: 16154420)
- 12) Abrams GD, **Ward SR**, Fridén J, Lieber RL. Architecture of Pronator Teres is an Appropriate Donor Muscle for Restoration of Wrist and Thumb Extension. *Journal of Hand Surgery*, 30A(5), 1068-1073, 2005. (PMID: 16182069).
- 13) **Ward SR**, Terk MR, Powers CM. The Influence of Patella Alta on Knee Extensor Mechanics. *J Biomech*, 38(12), 2415-2422, 2005. (PMID: 16214489)
- 14) **Ward SR**, Hentzen ER, Smallwood LH, Eastlack RK, Burns KA, Fithian DC, Fridén J, Lieber RL. Rotator Cuff Muscle Architecture: Implications for Glenohumeral Stability. *Clin Orthop*, July 448, 157 – 163, 2006. (PMID: 16826111)
- 15) **Ward SR**, Peace W, Fridén J, Lieber RL. Dorsal Transfer of the Brachioradialis to the Flexor Pollicis Longus Enables Simultaneous Powering of Key Pinch and Forearm Pronation. *Journal of Hand Surgery*, 31A(6) 993-997, 2006. (PMID: 16843162)
- 16) Long WT, **Ward SR**, Dorr LD, Raya J, Boutary M, Sirianni LE. Postoperative pain management following total knee arthroplasty Randomized comparison of continuous epidural versus femoral nerve infusion. *Journal of Knee Surgery* 19(2), 137-143, 2006. (PMID: 16642893)
- 17) Friden J, **Ward SR**, Smallwood L, Lieber RL. Passive muscle-tendon amplitude may not reflect skeletal muscle functional excursion. *Journal of Hand Surgery* 31(7), 1105-1110, 2006. (PMID: 16945711)

- 18) Ota S, **Ward SR**, Chen YJ, Tsai YJ, Powers CM. Concurrent Criterion-Related Validity and Reliability of a Clinical Device Used to Assess Lateral Patellar Displacement. *Journal of Orthopaedic and Sports Physical Therapy* 36(9), 645-652, 2006. (PMID: 17017269)
- 19) Boakes JL, Foran JR, **Ward SR**, Lieber RL. Muscle Adaptation by Serial Sarcomere Addition 1 year After Femoral Lengthening. *Clinical Orthopaedics and Related Research*, 456, 250-253, 2007. (PMID: 17065842)
- 20) **Ward SR**, Lundberg S, Enguidanos S, Loren GJ and Lieber RL. High Stiffness of Human Digital Flexor Tendons is Suited for Precise Finger Positional Control. *J Neurophysiology* 96(5), 2815-2818, 2006. (PMID: 16870841)
- 21) **Ward SR**, Terk MR, Powers CM. Patella Alta: Association with Patellofemoral Alignment and Changes in Contact Area During Weight-Bearing. *Journal of Bone of Joint Surgery* 89(8):1749-1755. 2007. (PMID: 17671014)
- 22) Takahasi M, **Ward SR**, Lieber RL. Intraoperative Single-Site Sarcomere Length Measurement Accurately Reflects Whole Muscle Sarcomere Length in the Rabbit. *Journal of Hand Surgery* 32(5), 612-617, 2007. (PMID: 17481997)
- 23) Eng CM, Abrams GD, Smallwood LR, Lieber RL, **Ward SR**. Forearm Muscle Volumes Can Be Accurately Quantified From High Resolution Magnetic Resonance Imaging (MRI). *Journal of Biomechanics* 40, 3261-3266, 2007. (PMC 2083633)
- 24) **Ward SR**, Davis J, Kaufman KR, Lieber RL. Relationship Muscle Stress and Intramuscular Pressure During Dynamic Muscle Contractions *Muscle and Nerve* 36, 313-319, 2007. (PMC17554796)
- 25) Minamoto VB, Hulst JB, Lim M, Peace WJ, Bremner SN, **Ward SR**, Lieber RL. Increased Efficiency and Decreased Systemic-Effects of Botulinum Toxin A Injection After Active or Passive Muscle Manipulation. *Dev Med Child Neurol* 49(12): 907-914, 2007. (PMC18039237)
- 26) **Ward SR**, Jones R, Long WT, Thomas DJ, Dorr LD. Functional Recovery of Muscles After Minimally Invasive Total Hip Arthroplasty. *Instr Course Lect* 24 (57), 249- 254, 2008. (PMC18399587)
- 27) Gokhin DS, **Ward SR**, Bremner SN, Lieber RL. Quantitative Analysis of Neonatal Skeletal Muscle Functional Improvement in the Mouse. *Journal of Experimental Biology* 211, 837-843, 2008. (PMID: 18310108)
- 28) Eng CM, Smallwood LH, Rainiero MP, **Ward SR**, Lieber RL. Scaling of Muscle Architecture and Fiber Types in the Rat Hindlimb. *Journal of Experimental Biology*, 211, 2336-2345, 2008. (PMID: 18587128)

- 29) **Ward SR**, Kim CW, Eng CM, Gottschalk GL, Tomiya A, Garfin SR, Lieber RL. Architectural Analysis and Intraoperative Measurements Demonstrate the Unique Design of the Multifidus Muscle for Lumbar Spine Stability. *Journal of Bone and Joint Surgery* 91(1) 176-185, 2009. (PMC2663324)
- 30) **Ward SR**, Eng CM, Smallwood LH, Lieber RL. Are Current Measurements of Lower Extremity Muscle Architecture Accurate? *Clin Orthop* 467(4), 1074-1082, 2009. (PMC2650051)
- 31) **Ward SR**, Takahashi M, Winters T, Kwan A, Lieber RL. A Novel Muscle Biopsy Clamp Yields Accurate *In Vivo* Sarcomere Length Values. *Journal of Biomechanics*, 19;42(2) 193-196, 2009. (PMC2674293)
- 32) **Ward SR**, Tomiya A, Regev G, Thacker BE, Benzl R, Kim CW, Lieber RL. Passive Mechanical Properties of the Lumbar Multifidus Support its Role as a Stabilizer. *Journal of Biomechanics*, 22;42(10) 1384-9, 2009. (PMC2752430)
- 33) Winters TM, Sepulveda GS, Cottler PS, Kaufman KR, Lieber RL, **Ward SR**. Correlation Between Isometric Force and Intramuscular Pressure in Rabbit Tibialis Anterior Muscle with an Intact Anterior Compartment. *Muscle and Nerve*, 40(1), 79-85, 2009. (PMC2713015)
- 34) Smith L, Pontén E, **Ward SR**, Subramaniam S, Lieber RL. Novel Transcriptional Profile in Wrist Muscles from Cerebral Palsy Patients. *BMC Genomics* 2:44; 2009. (PMC2722667)
- 35) Eng CM, **Ward SR**, Winters TM, Vinyard CJ, Taylor AB. The Morphology of the Masticatory Apparatus Facilitates Muscle Force Production at Wide Jaw Gapes in Tree-Gouging Common Marmosets (*Callithrix jacchus*). *Journal of Experimental Biology* 212(Pt 24), 4040-4055, 2009. (PMID: 19946083)
- 36) Arnold EM, **Ward SR**, Lieber RL, Delp SL. A Model of the Lower Limb for Analysis of Human Movement. **Cover Story**, *Annals of Biomedical Engineering* 38(2), 269-279, 2009. (PMC2903973)
- 37) Takahashi M, **Ward SR**, Marchuck LL, Frank CB, Lieber RL. Asynchronous Muscle and Tendon Adaptation After Surgical Tensioning Procedures. *Journal of Bone and Joint Surgery* 92A(3):664-674, 2010. (PMC2827824)
- 38) Regev G, Kim CW, Tomiya A, Garfin SR, **Ward SR**, Lieber RL. Regional Myosin Heavy Chain Distribution in Selected Paraspinal Muscles. *Spine* June 35(13), 1265-1270, 2010. (PMC2947743)

- 39) **Ward SR**, Winters TM, Blemker SS. The Architectural Design of the Gluteal Muscle Group: Implications for Movement and Rehabilitation. *Journal of Orthopaedic and Sports Physical Therapy* 40(2), 95-102, 2010. (PMID: 20118527)
- 40) Meyer GA, Bliss K, **Ward SR**, Morgan DL, Kellermayer MSZ, Lieber RL. Theoretical Predictions of the Effects of Force Transmission by Desmin on Intersarcomere Dynamics. *Biophysical Journal*, Jan 20, 98(2), 258-266, 2010. (PMC2808486)
- 41) Brown SHM, Hentzen E, Kwan A, **Ward SR**, Friden J, Lieber RL. Mechanical Strength of the Side-to-Side Versus Pulvertaft Weave Tendon Repair. *Journal of Hand Surgery* 35(4) 540-545, 2010. (PMC2852184)
- 42) Brown SHM, Banuelos K, **Ward SR**, Lieber RL. Architectural and Morphological Assessment of Rat Abdominal Wall Muscles: Comparison for Use as a Human Model. *Journal of Anatomy*, 217(3) 196-202, 2010. (PMC2919595)
- 43) Friden J, Shillito M, Chehab E, Finneran J, **Ward SR**, Lieber RL. Mechanical Feasibility of Immediate Mobilization of the Brachioradialis Muscle After Tendon Transfer. *Journal of Hand Surgery [Am]*, Sept;35(9):1473-1478, 2010. (PMC2947370)
- 44) Brown SHM, **Ward SR**, Cook, M, Lieber RL. Architectural Analysis of Human Abdominal Wall Muscles: Implications for Mechanical Function. *Spine* 36(5), 355-362, 2011. (PMC 3017737)
- 45) Gondim Teixeira PA, Omouni P, Trudell D, **Ward SR**, Resnick D. High Resolution Ultrasound Evaluation of the Trapeziometacarpal Joint with Emphasis on the Anterior Oblique Ligament (Beak Ligament). *Skeletal Radiol*, 40(7):897-904, 2011. (PMID: 21120474)
- 46) **Ward SR**, Sarver JJ, Eng CM, Kwan A, Wuergler-Hauri CC, Perry SM, Williams GR, Soslowsky LJ, Lieber RL. Plasticity of Muscle Architecture After Acute Supraspinatus Tears. *Journal of Orthopaedic and Sports Physical Therapy*, Nov 40(11), 918-925, 2010. (PMC4321894)
- 47) Winters TM, Takahashi M, Lieber RL, **Ward SR**. Whole Muscle Length-Tension Relationships Are Accurately Modeled as Scaled Sarcomeres in Rabbit Hindlimb Muscles. *Journal of Biomechanics* Jan 4(44), 109-115, 2011. (PMC3003754)
- 48) Regev G, Kim CW, Tomiya A, Lee YP, Ghofrani H, Garfin SR, Lieber RL, **Ward SR**. Psoas Muscle Architectural Design, *In Vivo* Sarcomere Length Range, and Passive Tensile Properties Support its Role as a Lumbar Spine Stabilizer. *Spine* 2011. (PMID: 21415810)
- 49) Lieber RL, **Ward SR**. Skeletal Muscle Design to Meet Functional Demands. *Philos Trans R Soc Lond B Biol Sci* May 27:366(1570), 1466-1476, 2011. **Review** (PMC3130443)

- 50) Brown SHM, Gregory DE, Carr JA, **Ward SR**, Masuda K, Lieber RL. (**ISSLS Prize**) Adaptations of the Multifidus Muscle in Response to Experimentally Induced Intervertebral Disc Degeneration. *Spine* Oct 1;36(21), 1728-1736, 2011. (PMID: 21301396)
- 51) Smith LR, Lee K, **Ward SR**, Chambers HG, Lieber RL. **Cover Story** : Hamstring Contractures in Children with Spastic Cerebral Palsy Result from Stiffer Extracellular Matrix and Increased *In Vivo* Sarcomere Length. *J Physiology*, 15 ;589(Pt 10) :2625-2639, 2011. (PMC3115830)
- 52) Gondim Teixeira PA, Omoumi P, Trudell DJ, **Ward SR**, Lecocq S, Blum A, Resnick DL. Ultrasound Assessment of the Lateral Ligamentous Complex of the Elbow : Imaging Aspects in Cadavers and Normal Volunteers. *Eur Radiol*, 21(7) :1492-1498, 2011. (PMID: 21318472)(PMC3101344)
- 53) Takahashi M, Takata S, Yasui N, **Ward SR**, Liber RL. Tendon Transfer Increases Passive Tension of the Entire Muscle, Fiber Bundle, and Single Fiber. *Jpn J Rehabil Med*, 48(2) :129-133, 2011.
- 54) Thacker BE, Tomiya A, Hulst JB, Suzuki KP, Bremner SN, Gastwirt RF, Greaser ML, Lieber RL, **Ward SR**. Passive Mechanical Properties and Related Proteins Change with Botulinum Neurotoxin A Injection of Normal Skeletal Muscle. *J Orthop Res*, 30(3):497-502, 2012. (PMC3227753)
- 55) Foran JH, Sheth NP, **Ward SR**, Della Valle CJ, Levine BR, Sporer Sm, Paprosky WG. Patient Perception of Physician Reimbursement in Elective Total Hip and Knee Arthroplasty. *J Arthroplasty*, May;27(5):703-709. 2012. (PMID: 22245124)
- 56) Friden J, Reinholdt C, Gohritz A, Peace WJ, **Ward SR**, Lieber RL. Simultaneous Powering of Forearm Pronation and Key Pinch in Tetraplegia Using a Single Muscle-Tendon Unit. *Journal of Hand Surgery [European]*, May; 37(4):324-329,2012. (PMC4084926)
- 57) Brown SHM, Carr JA, **Ward SR**, Lieber RL. Passive Mechanical Properties of Rat Abdominal Wall Muscles Suggest an important Role of the Extracellular Connective Tissue Matrix. *Journal of Orthopaedic Research*. 30(8), 1321-1326, 2012. (PMC3337947)
- 58) Derkacs AD, **Ward SR**, Lieber RL. The Use of Neural Networks and Texture Analysis for Rapid Objective Selection of Regions of Interest in Cytoskeletal Images. *Journal of Microscopy and Microanalysis*, Feb;18(1)115-122, 2012. (PMID: 22236365)
- 59) Tuttle LJ, **Ward SR**, Lieber RL. Sample Size Considerations in Human Muscle Architecture Studies. *Muscle and Nerve*, May;45(5):743-745, 2012. (PMC3335755)

- 60) Lieber RL, **Ward SR**, Frank LR, Schenk S. New Opportunities and Novel Paradigms to Support Neuromuscular Research. *Phys Med Rehabil Clin N Am*, Feb;23(1);95-105, 2012. (PMID: 22239877)
- 61) Krysl P, Bondi BW, **Ward SR**, Frank LR. On Sources of Error in Finite Element Solutions of Blast Effects on the Human Brain. *Journal of Computational and Non-linear Dynamics* 7(3) 2012.
- 62) Tirrell TF, Cook MS, Carr JA, Lin E, **Ward SR**, Lieber RL. Human Skeletal Muscle Biochemical Diversity. *Journal of Experimental Biology*, 215 (15): 2551-2559, 2012. (PMC3394665)
- 63) Takahashi M, **Ward SR**, Friden J, Lieber RL. Muscle Excursion Does Not Correlate with Increased Serial Sarcomere Number After Muscle Adaptation to Stretched Tendon Transfer. *Journal of Orthopaedic Research*, 30(11), 1774-1780, 2012. (PMC3407307)
- 64) Wagner FV, Negrao JR, de Campos J, **Ward SR**, Haghghi P, Trudell DJ, Resnick D. Capsular Ligaments of the Hip: Anatomic, Histologic and Positional Study in Cadaveric Specimens with MR Arthrography. *Radiology*, Apr;263(1):189-198, 2012 (PMID: 22371607).
- 65) Haloman S, Chen L, **Ward SR**, Fithian D, Afra R. Magnetic Resonance Imaging-Based Topographical Differences between Control and Recurrent Patellofemoral Instability Patients. *Am J Sports Med* Feb;41(2):374-384, 2013 (PMID: 23371940).
- 66) Malhotra N, Madison SJ, **Ward SR**, Mariano ER, Loland VJ, Ilfeld BM. Continuous interscalene nerve block following adhesive capsulitis manipulation. *Reg Anesth Pain Med* Mar;38(2):171-172, 2013 (PMC3578220)
- 67) Rodriguez-Soto AE, Jaworski R, Jensen A, Neiderberger B, Hargens A, Frank LR, Kelly KR, **Ward SR**. Effect of Load Carriage on Lumbar Spine Kinematics. *Spine* Jun 1;38(13):E783-791, 2013 (PMID: 23524870).
- 68) Lieber RL, **Ward SR**. Cellular Mechanisms of Tissue Fibrosis. 4. Structural and Functional Consequences of Skeletal Muscle Fibrosis. *Am J Physiol Cell Physiol*, Aug;305(3)C241-252, 2013 (PMC3742845).
- 69) Tuttle LJ, Nguyen OT, Cook MS, Alperin M, Shah SB, **Ward SR**, Lieber RL. Architectural Design of the Pelvic Floor is Consistent with Muscle Functional Subspecialization. *International Urogynecology Journal*, Feb;25(2):205-12, 2013. (PMC4104205)
- 70) Hulst JB, Minamoto VB, Lim MB, Bremner SN, **Ward SR**, Lieber RL. Systematic Test of Neurotoxin Dose and Volume on Muscle Function in a Rat Model. *Muscle and Nerve*, 2013 (PMID: 23929710).

- 71) Cheuy VA, Hastings MK, Commean PK, **Ward SR**, Mueller MJ. Intrinsic Foot Muscle Deterioration is Associated with Metatarsophalangeal Joint Angle in People with Diabetes and Neuropathy. *Clinical Biomechanics*, Nov-Dec;28(9-10):1055-1060, 2013. (PMC3893062)
- 72) Mathewson M, Kwan A, Eng CM, Lieber RL, **Ward SR**. Comparison of Rotator Cuff Muscle Architecture Between Humans and Other Selected Vertebrate Species. *J Exp Biol*, Jan;15;217(pt2):261-273, 2014. (PMC3898624)
- 73) Killian ML, Cavinatto L, Shah SA, Sato EJ, **Ward SR**, Havlioglu N, Galatz LM, Thomopoulos S. The Effects of Chronic Unloading and Gap Formation on Tendon-to-Bone Healing in a Rat Model of Massive Rotator Cuff Tears. *Journal of Orthopaedic Research*, Mar;32(3)439-447, 2014. (PMC3900302)
- 74) Mukund K, Mathewson M, **Ward SR**, Subramaniam S, Lieber RL. Systems Analysis of Transcriptional Data Provides Insights into Muscle's Biological Response to Botulinum Toxin. *Muscle and Nerve*, Nov;50(5):744-758, 2014. (PMC4136975).
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- 233) Berry DB, Englund EE, Shahidi B, Frank LR, **Ward SR**. Multiparametric MRI Characterization of Level Dependent Differences in Lumbar Muscle Size, Quality, and Microstructure. MyoMRI, Berlin, 2019.
- 234) Englund E, Berry DB, Frank LR, **Ward SR**, Shahidi B. Changes in Lumbar Extensor Muscle Blood Flow Following Exercise Assessed with Intravoxel Incoherent Motion. MyoMRI, Berlin, 2019.
- 235) Grant C, Berry DB, Farnsworth CL, **Ward SR**, Shahidi B, Newton PO. The Influence of 3D Curve Severity and Sex on Paraspinal Muscle Fatty Infiltration in Patients with Adolescent Idiopathic Scoliosis. ORS 2020.
- 236) Grant C, Berry DB, Farnsworth CL, **Ward SR**, Shahidi B, Newton PO. The Influence of 3D Curve Severity and Sex on Paraspinal Muscle Fatty Infiltration in Patients with Adolescent Idiopathic Scoliosis. POSNA 2020.
- 237) Grant C, Berry DB, Farnsworth CL, **Ward SR**, Shahidi B, Newton PO. The Influence of 3D Curve Severity and Sex on Paraspinal Muscle Fatty Infiltration in Patients with Adolescent Idiopathic Scoliosis. iMAST 2020.
- 238) Hyman SA, Hernandez MJ, Bremner SN, Esparza MC, Dorn S, Christman KL, **Ward SR**. Rabbit Rotator Cuff Muscle Contractility Following Tenotomy, Repair, and Extracellular Matrix Hydrogel Treatment. ORS 2020.

- 239) Berry D, Englund E, Gallinsky V, Frank L, **Ward S**. Using the Random Permeable Barrier Model to Predict Fiber Size in Histology Informed Simulated Skeletal Muscle Models. ISMRM 2020. (**Magna Cum Laude Merit Award**)
- 240) Englund E, Berry DB, Galinsky V, Konersman C, Chen S, Frank L, **Ward SR**. Comparison of Simulated and Experimental Time-Dependent Diffusion in Skeletal Muscle. ISMRM 2020.
- 241) Englund E, Berry D, Behun J, Frank L, **Ward SR**, Shahidi B. IVIM MRI Evaluation of Blood Flow Response to Exercise in Patients with Back Pain Compared to Healthy, Pain-Free Controls. ISMRM 2020.
- 242) Ruoss S, Ball ST, Nasamran C, Dorn SN, Parekh J, Fisch KM, **Ward SR**. Cell Populations of Minimally Manipulated Bone Marrow Aspirate Concentrate and the Adipose-Derived Stromal Vascular Fraction Harvested from the same Patients are Different. ORS Late Breaking Abstract, 2020
- 243) Chan J, Uong J, Palispis W, Steward O, Shah S, **Ward SR**, Gupta R. Morphometric Remodeling of Human Motor Endplates after Peripheral Nerve Injury. ASSH 2020.
- 244) Norman MB, Hyman SA, Fithian DC, Lane JG, Dorn SN, Esparza MC, **Ward SR**. Assessment of Shoulder Function in a Rabbit Model of Chronic Rotator Cuff Tear and Repair. AAOS 2021.
- 245) Hyman SA, Norman MB, Dorn SN, Bremner SB, Esparza C, **Ward SR**. In Vivo Supraspinatus Physiology in Rabbit. AAOS 2021.
- 246) Ruoss SJ, Ball ST, Parekh JN, **Ward SR**. Acetabular Bone Marrow Aspiration During Total Joint Arthroplasty. AAOS 2021.
- 247) Borst J, Palmer I, Smith T, Ruoss S, Kalunian K, **Ward SR**. The Power of Placebo: Differential Effects in Interventional Trials for Knee Osteoarthritis. ORS 2021.
- 248) Ruoss S, Nasamran C, Ball ST, Walker JT, Ahmed SS, Parekh JJ, Fisch K, Engler A, **Ward SR**. The Heterogeneity of Bone Marrow Mesenchymal Stem/Stromal Cells in Mouse is not Present in Clinical Cell Preparations, ORS 2021.
- 249) Ruoss S, Nasamran C, Ball ST, Parekh JJ, Fisch K, Engler A, **Ward SR**. Human bone marrow- and adipose-derived cell preparations yield different stem/stromal cells. ORS 2021.
- 250) Anderson BJ, Esparza M, Zlomislic V, Allen RT, Garfin SR, Ward SR, Shahidi B. Fibrogenic and Metabolic Gene Expression is related to Multifidus Muscle Adaptation Following Lumbar Spine Surgery. NASS 2021.

- 251) Emanuelsson E, Berry D, Reitzner S, Gustafsson, **Ward S**, Sundberg C, Chapman M. MRI Characterization of Skeletal Muscle Size and Quality in Long-Term Trained and Untrained Individuals. Scandinavian Physiological Society 2021.
- 252) Zogby AM, Wu I, Esparza MC, Fithian DC, Lane JG, Dorn SN, Wolek C, Ruoss S, Singh A, **Ward SR**. Barium Chloride and Losartan Reduce Muscle Degeneration in a Rabbit Model of Chronic Rotator Cuff Tear and Repair. ASES 2021.
- 253) Wu I, **Ward SR**. The Deep Region of the Supraspinatus Muscle is Architecturally Distinct. 2021 OREF California Regional Resident Research Symposium.
- 254) Vasquez-Bolanos LS, Gibbons MC, Ruoss S, Vargas-Vila M, Hyman SA, Esparza MC, Fithian DC, Lane JG, Singh A, Nasamran CA, Fisch KM, **Ward SR**. Muscle Transcriptomics in a Rabbit Model of Rotator Cuff Repair. ORS 2022.
- 255) Ruoss S, Whisenant T, Nasamran CA, Ball ST, Chen JL, Parekh JN, Dorn SN, Fisch KM, Engler AJ, **Ward SR**. The Proteome of Human Bone Marrow- and Adipose-derived Cell Preparations is Largely Independent of “stem cells”. ORS 2022.
- 256) Ordaz A, Anderson B, Zlomislic V, Allen RT, Schenk S, **Ward SR**, Shahidi B. Diagnosis Related to Differences in Adipogenic and Fibrogenic Paraspinal Muscle Gene Expression in Individuals Undergoing Surgery for Lumbar Spine Pathology. AAOS 2022.
- 257) Emanuelsson EB, Berry DB, Reitzner SM, Arif M, Mardinoglu A, Gustafsson T, **Ward SR**, Sundberg CJ, Chapman CA. MRI Characterization of Skeletal Muscle Size and Fatty Infiltration in Long-Term Trained and Untrained Individuals. *Submitted to ACSM* 2021.
- 258) Shahidi B, Eastlack RK, Mundis GM, Kim C, Allen RT, Garfin SR, Osorio J, Taylor W, Newton PO, **Ward SR**, Akbarnia BA. A Collaborative Regional Multisite and Multi-Departmental Initiative for Improving Consensus on Clinical Outcomes Data in Spine Surgery. ISSLS 2022.
- 259) Wu I, Gibbons M, Esparza M, Vasquez-Bolanos LS, Hyman SA, Dorn SN, Singh A, Lane JG, Fithian DC, Ruoss S, **Ward SR**. The “Second Hit” of Rotator Cuff Repair in a Chronic Tear Rabbit Model. WOA 2022.
- 260) Cakici J, Schairer C, Ruoss S, Brothers K, Ward S, Bloss C. Perceived Risks and Benefits of Human Performance Research Biobanking for Professional Athletes in the United States. American Society for Bioethics and Humanities, 2022.
- 261) Cakici J, Schairer C, Ruoss S, Brothers K, Ward S, Bloss C. Opportunities for Innovation in the Creation of a Human Performance Research Biobank of Professional Athletes: Preliminary Results from Key Informant Interviews. ELSI Congress, 2022.

PRESENTATIONS

- 1) Plantar-Foot Forces and Impulses on Step Benches With Varying Structural Properties. NSCA National Conference. 1996.
- 2) Current Concepts in Total Joint Rehabilitation (1999) Department of Physical Therapy, California State University Long Beach
- 3) Observational Gait Analysis (2000). Department of Physical Therapy, University of Southern California.
- 4) Current Concepts in Total Joint Rehabilitation (2000). Department of Physical Therapy, California State University Long Beach.
- 5) Analysis of Patellofemoral Joint Relationships using Kinematic Magnetic Resonance Imaging: A Comparison of Quantitative and Qualitative Methods. American Academy of Orthopaedic Surgeons 2001.
- 6) In Vivo Patellofemoral Contact Area is not Affected by Quadriceps Muscle Activity. Orthopaedic Research Society 2001.
- 7) The Effect of Bracing on Patellar Kinematics During Weightbearing and Non-Weightbearing Movements. American College of Sports Medicine 2001.
- 8) Patellar Kinematics During Weightbearing and Non-Weightbearing Movements in Persons With Patellar Subluxation. International Society of Biomechanics 2001.
- 9) Assessment of Patellofemoral Joint Mechanics Using Kinematic Magnetic Resonance Imaging: Implications for Clinical Practice. Annual meeting of the *American Physical Therapy Association*, Anaheim, CA 2001.
- 10) Patellofemoral Biomechanics (2001). American Physical Therapy Association Annual Meeting.
- 11) Current Concepts in Total Joint Rehabilitation (2001). Department of Physical Therapy, California State University Long Beach.
- 12) Musculoskeletal Modeling and Muscle Co-Contraction (2001). Motor Control Seminar, Department of Engineering, University of Southern California.
- 13) Advanced Knee Biomechanics (July 2001). Department of Physical Therapy, Northern Arizona University.
- 14) Advanced Knee Biomechanics (August 2001). Department of Physical Therapy, Northern Arizona University.

- 15) The Influence of Medial Femoral Rotation on Patellar Tilt Angle During Weightbearing and Non-weightbearing Movements. American College of Sports Medicine 2002.
- 16) Biomechanics of Hip Dislocation (2002). Department of Rehabilitation Medicine, Casa Colina Medical Center.
- 17) Current Concepts in Total Joint Rehabilitation (2002). Department of Physical Therapy, California State University Long Beach.
- 18) The Shoulder Complex (2002). Department of Radiology, School of Medicine, University of Southern California.
- 19) Comparison of Patellofemoral Alignment and Contact Area in Persons with and without Patella Alta. Southern California Conference on Biomechanics 2003.
- 20) Error Associated With MRI Based Measurements of Patellofemoral Alignment: The Influence of Femoral Rotation. XIXth congress of the International Society of Biomechanics 2003.
- 21) The Influence of Patella Alta on Knee Extensor Mechanics. American Society of Biomechanics 2003.
- 22) Patella Alta on Knee Extensor Mechanics (2003). Department of Orthopaedics, University of California, San Diego.
- 23) Current Concepts in Total Joint Rehabilitation (2003). Department of Physical Therapy, California State University Long Beach.
- 24) Biomechanics of Hip Dislocation (2003). Master's Series Surgical Conference, Pasadena, CA.
- 25) Arthritis and Exercise (2003). Arthritis Health Day, Centinela Hospital, Los Angeles, CA. June, 2003.
- 26) Comparison of Patellofemoral Alignment and Contact Area in Persons With and Without Patella Alta. Combined Sections Meeting, American Physical therapy Association 2004.
- 27) The Influence of Patella Alta on Patellofemoral Joint Stress During Free and Fast Walking. Combined Sections Meeting, American Physical Therapy Association 2004.
- 28) Stiffness of Human Digital Flexor Tendons Suited for Precise Positional Control of Fingers. Christopher Reeves Paralysis Foundation Meeting 2004.
- 29) Density and Hydration of Fixed Human Muscle Tissue. American Society of Biomechanics September 2004.

- 30) Current Concepts in Total Joint Rehabilitation (2004). Department of Physical Therapy, California State University Long Beach.
- 31) Patella Alta on Knee Extensor Mechanics (2004). Department of Physical Therapy, Saint Louis University.
- 32) Patella Alta on Knee Extensor Mechanics (2004). Department of Physical Therapy, Duke University.
- 33) Patella Alta on Knee Extensor Mechanics (2004). Department of Physical Therapy, Washington University in Saint Louis.
- 34) Patella Alta on Knee Extensor Mechanics (2004). Department of Physical Therapy, University of Miami.
- 35) Patellofemoral Biomechanics (2004). Veterans Administration, San Diego.
- 36) Patellofemoral Biomechanics (2004). Department of Community and Family Medicine, Duke University.
- 37) Rotator Cuff Muscle Architecture: Implications for Glenohumeral Joint Stability. Experimental Biology 2005.
- 38) Patella Alta is Associated With Patellofemoral Malalignment and Reduced Contact Area. International Society of Biomechanics. August, 2005.
- 39) Rotator Cuff Muscle Architecture: Implications for Glenohumeral Joint Stability. International Society of Biomechanics. August, 2005.
- 40) Scaling of Human Lower Extremity Muscle Architecture to Skeletal Dimensions. International Society of Biomechanics, August, 2005.
- 41) Skeletal muscle Design and Plasticity (2005). School of Medicine, University of Panama.
- 42) Current Concepts in Total Joint Rehabilitation (2005). Department of Physical Therapy, California State University Long Beach.
- 43) Patellofemoral Biomechanics (2005). Department of Orthopaedic Surgery, University of California San Diego.
- 44) The Operating Ranges of the Rotator Cuff Muscles: Implications for injury and Rehabilitation. Combined Sections Meeting, American Physical Therapy Association, February, 2006.

- 45) Stress-Dependent and Stress-Independent Gene Expression in Rat Skeletal Muscle After a Single Bout of “Exercise”. Combined Sections Meeting, American Physical Therapy Association, February, 2006.
- 46) Muscle Architectural Changes After Rotator Cuff Tear in the Rat. American College of Sports Medicine, 2006.
- 47) The Architectural Design of the Lumbar Multifidus Muscle Supports its Role as Stabilizer. World Congress on Biomechanics, 2006.
- 48) Forearm Muscle Volumes can be Accurately Obtained from High Resolution MRI. World Congress on Biomechanics, 2006.
- 49) MIS Surgery: Status of Results and Complications (2006). Master Series Surgical Conference, Pasadena, CA.
- 50) The Multifidus Muscle is the Strongest Stabilizer of the Lumbar Spine. *American Physical Therapy Association*, CSM 2007.
- 51) Plasticity of Muscle Architecture After Acute Supraspinatus Tear. *American Physical Therapy Association*, CSM 2007.
- 52) Human Lower Extremity Muscle Design. *Orthopaedic Research Society* 2007.
- 53) Intraoperative Laser Diffraction Yields Accurate Whole Muscle Sarcomere Lengths During Tendon Transfer Surgery. *Federation of European Societies for Surgery of the Hand* 2007.
- 54) Heterogeneous Muscle and Tendon Length Changes to Acute Tendon Transfers. *Federation of European Societies for Surgery of the Hand* 2007.
- 55) Human Lower Extremity Muscle Design: Architecture of the Hip, Knee, and Ankle Muscles. *American Society of Biomechanics* 2007.
- 56) Human Lower Extremity Muscle Design: Architecture of the Human Hamstring and Quadriceps Muscles. *American Society of Biomechanics* 2007.
- 57) Scaling of Joint Mechanics and Muscle Architecture in the Human Knee. *American Society of Biomechanics* 2007.
- 58) The Relationship Between Muscle Force and Intramuscular Pressure During Dynamic Muscle Contractions. *American Society of Biomechanics* 2007.
- 59) Shoulder Muscle Architecture (2007). San Diego Chapter of the American Physical Therapy Association.

- 60) Shoulder Muscle Architecture and Imaging (2007). Department of Radiology Grand Rounds, University of California, San Diego.
- 61) Human Lower Extremity Muscle Architecture (2007). Department of Bioengineering, Stanford University, September 2007.
- 62) Shoulder Muscle Design; Architectural Changes in Response to Injury and Repair (2007). Keynote Lecture, Department of Physical Therapy, California State University, Long Beach.
- 63) Shoulder Muscle Design; Architectural Changes in Response to Injury and Repair (2007). Department of Physical Medicine and Rehabilitation, John's Hopkins University.
- 64) The Influence of Brachioradialis Routing on Wrist and Thumb Function (2007). San Diego Tendon Transfer Course, University of California San Diego.
- 65) Architectural Analysis and Intraoperative Measurements Demonstrate the Multifidus' Unique Design for Lumbar Spine Stability. *North American Congress on Biomechanics* 2008.
- 66) The Biomechanics and Muscle Physiology of Knee Rehabilitation Exercises. *Combined Sections Meeting, American Physical Therapy Association* 2008.
- 67) The Biomechanics and Muscle Physiology of Knee Rehabilitation Exercises (2008). American Physical Therapy Association Annual Meeting.
- 68) Shoulder Muscle Design; Architectural Changes in Response to Injury and Repair (2008). Department of Physiology and Biophysics, University California Irvine.
- 69) Architectural Analysis and Intraoperative Measurements Demonstrate the Multifidus' Unique Design for Lumbar Spine Stability (2008). Department of Radiology, University of California San Diego.
- 70) Shoulder Impingement; Muscle Structure, Function, and Rehabilitation. *Combined Sections Meeting, American Physical Therapy Association* 2009.
- 71) Comparison of Rotator Cuff Muscle Architecture between Humans and Selected vertebrate Species. *American Society of Biomechanics* 2009.
- 72) Lower Extremity Muscle Volumes Can be Accurately Obtained from High Resolution MRI. *American Society of Biomechanics* 2009.
- 73) Architectural Analysis and Intraoperative Measurements Demonstrate the Multifidus' Unique Design for Lumbar Spine Stability (2009). Department of Rehabilitation, Washington University in St. Louis.

- 74) Shoulder Muscle Architecture; Adaptive Responses to Injury and Repair (2009). Department of Orthopaedic Surgery, University California San Diego.
- 75) Human Lower Extremity Muscle Design (2009). Workshop on Multi-Scale Muscle Mechanics, Woodshole Massachusetts.
- 76) Skeletal Muscle Design; Implications for the Shoulder, Lumbar spine, and Knee (2009). California Chapter of the American Physical Therapy Association, Annual Meeting.
- 77) Passive Mechanical Properties of the Human Supraspinatus and Infraspinatus Muscles. *International Shoulder Group* 2010.
- 78) Muscle Architecture Determines Functional Properties Proportional to Surgical Release. *Tetraplegia Hand Meeting* 2010.
- 79) Shoulder Muscle Design (2010). Stanford University Symposium on Shoulder Pain in Tetrapelgia.
- 80) Muscle and Tendon Microanatomy and Physiology (2010). Doctor's Demystify Tendon Transfer Surgery, UCSD.
- 81) Non-invasive Imaging of Intramuscular Fat (2010). Research Conference, Department of Orthopaedic Surgery, UCSD.
- 82) Muscle Architecture and Plasticity of the Human Shoulder (2010). Grand Rounds, Department of Orthopaedic Surgery, UCSD.
- 83) Non-invasive Imaging of Intramuscular Fat in the Shoulder (2010). Research Conference, Department of Movement Science, Washington University in St. Louis.
- 84) Human Shoulder Muscle Structure and Function in Health and Disease (2010). Rehabilitation and Biomedical Engineering Research Conference, Department of Biokinesiology and Physical Therapy, University of Southern California.
- 85) Human Shoulder Muscle Structure and Function in Health and Disease (2010). Department of Physical Therapy, University of Delaware.
- 86) Paraspinal Muscle Design and Plasticity (2010). Grand Rounds, Department of Orthopaedic Surgery, UCSD.
- 87) A Novel Device for Physiologic MR Imaging of the Patellofemoral Joint Under Controlled Loads. American Society of Biomechanics 2011.
- 88) Skeletal Muscle Design and Plasticity (2011). Sharmann/Wash U Retreat, Innsbrook, MO.

- 89) International Muscle Physiology Workshop (March, 2011). National Skeletal Muscle Research Center, University of California San Diego.
- 90) Human Skeletal Muscle Architecture (October, 2011). Department of Physical Therapy, Washington University in St. Louis.
- 91) Biomechanical and Imaging Studies of the Human Rotator Cuff (November, 2011). Wayne Akesson Lecture Series, University of California San Diego.
- 92) Skeletal Muscle Adaptation After Rotator Cuff Injury in a Rat Model. Orthopaedic Research Society 2012.
- 93) Human Shoulder Muscle Function in Health and Disease (June, 2012). Grand Rounds, Department of Rheumatology, UCSD.
- 94) Lumbar Spine Muscle Anatomy, Physiology, and Plasticity (September, 2012). California Physical Therapy Association, Santa Clara, CA.
- 95) Commencement Address (May, 2012), College of Health and Human Services, California State University Long Beach.
- 96) Commencement Address (May, 2012), Department of Physical Therapy, California State University Long Beach.
- 97) Human Shoulder Muscle Function in Health and Disease (July, 2012). Visiting Professor-Muscular Dystrophy Center and Programs in Rehabilitation Science and Physical Therapy, University of Minnesota, Minneapolis, MN.
- 98) Muscle Anatomy, Physiology, and Plasticity (January, 2013). Department of Physical Therapy, Thornton Hospital, University of California San Diego.
- 99) Human Shoulder Muscle Function in Health and Disease (March, 2013). Grand Rounds, Department of Physical Medicine and Rehabilitation, John's Hopkins University, Baltimore, MD.
- 100) Muscle, Fat, and Fibrosis- Muscle Recovery Gone Haywire (March, 2013). Center for Functional Magnetic Resonance Imaging, University of California San Diego.
- 101) Lumbar Spine Muscle Anatomy, Physiology, and Plasticity (February, 2013). University of Delaware, Center for Composite Materials.
- 102) Human Shoulder Muscle Function in Health and Disease (May 2013). Grand Rounds, Department of Human Physiology, University of Oregon, Eugene, OR.
- 103) National Skeletal Muscle Research Center (May 2013). K12 Annual Meeting, Los Angeles, CA.

- 104) New Directions in Rotator Cuff Muscle Rehabilitation (Aug 2013). Research Grand Rounds, Department of Orthopaedic Surgery, University of California San Diego.
- 105) Human Shoulder Muscle Function in Health and Disease (Sept 2013). Grand Rounds, Department of Physical Therapy, Northwestern University, Chicago, IL.
- 106) Anatomy and Biomechanics of Skeletal Muscle (Sept 2013). MSK Radiology Rounds, University of California San Diego.
- 107) Physiological and Mechanical Adaptations of Skeletal Muscle IN Response to Tendon Rupture (October 2013). MuscleTech Workshop, Football Club of Barcelona, Barcelona, Spain.
- 108) Imaging Musculoskeletal Injuries- Strengths and Weaknesses of Different Imaging Modalities (October 2013). MuscleTech Workshop, Football Club of Barcelona, Barcelona, Spain.
- 109) Muscle Atrophy, Fatty Infiltration, and Fibrosis (November 2013). St Jude's Medical Center, Memphis, Tennessee.
- 110) National Skeletal Muscle Research Center (Nov 2013). American College of Rehabilitation Medicine, Orlando, Florida.
- 111) Skeletal Muscle Responses to Functional Loading. Combined Sections Meeting, American Physical Therapy Association, 2014.
- 112) Muscle Gene Expression Patterns in Human Rotator Cuff Pathology. American Academy of Orthopaedic Surgeons, 2014.
- 113) Muscle Gene Expression Patterns in Human Rotator Cuff Pathology. World Congress of Biomechanics, 2014.
- 114) Kinesiology (March 2014). Orthopaedic Basic Science Course, Orthopaedic Research Society/American Academy of Orthopaedic Surgeons Joint Program.
- 115) Research Careers for Clinicians and Scientists (April 2014), California Student Assembly, American Physical Therapy Association
- 116) Human Shoulder Muscle Design and Plasticity, Massachusetts General Hospital, June 2014.
- 117) Human Skeletal Muscle Design and Plasticity, UCSF Orthopaedic Grand Rounds, September 2014.

- 118) Human Shoulder Muscle Design and Plasticity, Grand Rounds, Department of Orthopaedic Surgery, University of California San Diego, September 2014.
- 119) The Chart, Compass, and Sextant. Calibrating Your Professional Navigation Tools. Arcadia University, Pennsylvania. November 2014.
- 120) Rotator Cuff Muscle Design and Plasticity. San Diego Skeletal Muscle Research Center. Sanford-Burnham Institute, November 2014.
- 121) Epigenetics in Rehabilitation. Combined Sections Meeting, American Physical Therapy Association, 2015.
- 122) Human Shoulder Muscle Design and Plasticity, Duke University Orthopaedic Grand Rounds, April 2015.
- 123) Kinesiology. Orthopaedic Basic Science Course, Orthopaedic Research Society/American Academy of Orthopaedic Surgeons Joint Program, Las Vegas, March 2015.
- 124) Shoulder Muscle Design and Plasticity, UCSD University Orthopaedic Grand Rounds, April 2015.
- 125) Muscle Design and Plasticity, UCSD CFMRI Seminar Series, May 2015.
- 126) Human Shoulder Muscle Design and Plasticity, UCSD University Radiology Grand Rounds, June 2015.
- 127) Skeletal Muscle Design and Plasticity, UCSD-Mie University Symposium for Bioengineering Research and Education. August, 2015.
- 128) Human Shoulder Muscle Design and Plasticity, University of Zurich/Balgrist Hospital, October 2015.
- 129) Imaging Muscle Tendon Injuries- Perils and Promise, Muscle Tech Workshop, Football Club of Barcelona, October 2015.
- 130) Eugene Michel's Forum- Advancing Rehabilitation Research in Today's Environment. Combined Sections Meeting on the American Physical Therapy Association, February 2016.
- 131) The Human Forearm and Hand, School of Medicine Gross Anatomy, University of California San Diego, January, 2016.
- 132) Kinesiology. Orthopaedic Basic Science Course, Orthopaedic Research Society/American Academy of Orthopaedic Surgeons Joint Program, Orlando, FL, March 2016.

- 133) Skeletal Muscle Design and Plasticity. Department of Orthopaedic Surgery, University of Zurich/Balgrist Hospital, June, 2016.
- 134) Rotator Cuff Muscle Design and Plasticity. Lamplighter's Association, La Jolla, CA, October 2016.
- 135) Muscle Properties in Human Rotator Cuff Tears. Sanford Consortium Stem Cell Clinical Center: Orthopaedic Applications of Stem Cell Research. June 2017.
- 136) 50th Anniversary of CSULB Physical Therapy. Hyatt Regency Long Beach, August, 2017.
- 137) Rotator Cuff Muscle Design and Plasticity. Department of Orthopaedic Surgery, University of California Los Angeles, October 2017.
- 138) Human Skeletal Muscle Design and Plasticity. Steven J. Rose Memorial Lecture, Washington University in St. Louis, April 2018.
- 139) Rotator Cuff Muscle Degeneration and Strategies for Regeneration. International Cartilage Regeneration and Preservation Society. San Diego, 2019.
- 140) Co-Chair and Speaker, Rotator Cuff Muscle Degeneration and Strategies for Regeneration. 5th Annual Vail Scientific Summit – Advances in Regenerative Medicine. Vail, CO, Aug 2019.
- 141) Impaired Muscle Growth and Regeneration after Chronic Rotator Cuff Tears. 8th Annual Musculoskeletal Repair and Regeneration Symposium, Albert Einstein College of Medicine, New York, New York, October, 2019.
- 142) Short Echo Diffusion and Skeletal Muscle Microstructure. 2nd MYO-MRI meeting, Humbolt University of Medicine, Berlin, Germany, November, 2019.
- 143) From Cellular to Joint Mechanics: Evidence for the Multifactorial Nature of Rotator Cuff Disease. APTA, CSM, Denver 2020.
- 144) Bedside to Bench—Strategic Decisions in the Use of Advanced Biological Tools for Neuromuscular Research. APTA, CSM, Denver 2020.
- 145) Integrated Innovation in Orthopaedic Surgery. UC San Diego Orthopaedic Chair Grand Rounds, May, 2020.
- 146) Orthopaedic Care in the COVID-19 ERA. UCSD Webinar, May 28th, 2020.
- 147) Emerging Promising Technologies for MPS: Electrophysiology, MRI, PET, US. Quantitative Evaluations of Myofascial Tissues: Implications for Musculoskeletal Pain Research. NIH Heal Initiative Workshop, September 15-16, 2020.

- 148) Wu Tsai Human Performance Alliance, Vice Chancellor's Cabinet for Research Matters (VCCRM), October 2020.
- 149) From Cellular to Joint Mechanics: Evidence for the Multifactorial Nature of Rotator Cuff Disease. UCSD Bioengineering Seminar April 2, 2020.
- 150) The Multifactorial Nature of Rotator Cuff Disease. UCSD Performance Institute Leadership Meeting, 2020.
- 151) Human Skeletal Muscle Design and Plasticity: The Rotator Cuff as a Model System. USC Musculoskeletal Biomechanics Research Lab, March 2021.
- 152) Impaired Muscle Growth and Regeneration in Chronic Rotator Cuff Tears. UCSD Bioengineering Seminar Series, April 2021.
- 153) Translational Musculoskeletal Research. Wu Tsai Human Performance Alliance, April 2021.
- 154) Lumbar Spine Muscle Anatomy, Physiology, and Plasticity. UCSD Neurosurgery Grand Rounds, April 2021.
- 155) Clinical Research Strategy, MedTech Device Bootcamp, UCSD Institute for the Global Entrepreneur, May 2021.
- 156) Lumbar Spine Muscle Anatomy, Physiology, and Plasticity. UCSD Pain Medicine Grand Rounds, June 2021.
- 157) Tip of the Spear in Orthopaedic Research. UCSD Orthopaedics Faculty Meeting August, 2021
- 158) Musculoskeletal Anatomy of the Shoulder Region, Airlangga University, Indonesia, September 2021.
- 159) Skeletal Muscle Design and Physiology, Airlangga University, Indonesia, September 2021.
- 160) Skeletal Muscle Design and Plasticity in Rotator Cuff Tears, Airlangga University, Indonesia, September 2021.
- 161) Orthopaedic Research Strategic Plan. Vice Chancellor's Cabinet on Research, September 2021.
- 162) UCSD MedTech Sector, Innovation in Health Care, UCSD School of Medicine, October 2021.

- 163) Impaired Muscle Growth and Regeneration in Chronic Rotator Cuff Tears. UCSD Mechanical and Aerospace Engineering (MAE), October 2021.
- 164) Wu Tsai Human Performance Alliance. UCSD MARC Seminar, November 2021.
- 165) Impaired Muscle Growth and Regeneration in Chronic Rotator Cuff Tears. UCSD Wu Tsai Human Performance Alliance Seminar Series, November 21.
- 166) ACTRI Scientific Climate Survey. UCSD Department of Orthopaedic Surgery, December 2021.
- 167) Orthopaedic Research Strategic Plan. Department of Orthopaedic Surgery, September 2021.
- 168) Wu Tsai Human Performance Alliance. UCSD Foundation Board of Trustees, December 2021.
- 169) Device Acceleration Center. UCSD Department of Surgery, December 2021.
- 170) Impaired Muscle Growth and Regeneration in Chronic Rotator Cuff Tears. University of Florida Neuromuscular Symposium Plenary Lecture, March 2022.

MEDIA PRESENTATIONS

1. Corona Virus Pt 1. w/ Dr. Sam Ward. Holding the Line Podcast, Anchor FM, April 3, 2020.
2. UCSD Orthopaedic Residency Recruitment Videos, 2020.
3. Stanford/Edleman PR- Media Training
4. Wu Tsai Alliance: <https://www.sandiegouniontribune.com/news/science/story/2021-07-21/la-jolla-billionaire-donation>
5. Wu Tsai Alliance: <https://ucsdnews.ucsd.edu/pressrelease/uc-san-diego-among-six-u.s-institutions-in-new-wu-tsai-human-performance-alliance>
6. Wu Tsai Alliance: https://www.espn.com/espn/story/_/id/31858227/joe-clara-tsai-foundation-commits-220m-wu-tsai-human-performance-alliance
7. Wu Tsai Alliance: <https://www.lajollalight.com/news/story/2021-07-21/la-jolla-billionaire-couple-donate-220-million-to-study-health-lessons-to-be-learned-from-elite-athletes>

UNIVERSITY TEACHING

1. University of Southern California- PT541L (Human Gross Anatomy)
 - i. Laboratory Instructor (Fall 1998)
2. California State University Long Beach- PT401 (Human Gross Anatomy)
 - i. Instructor (Summer 1998)
3. University of Southern California- PT541L (Human Gross Anatomy)

- i. Laboratory Instructor (Fall 1999)
- 4. University of Southern California- PT574 (Human Clinical Biomechanics)
 - i. Guest-Lecturer (Spring 1999)
 - 1. Hard and Soft Tissue Mechanics, Shoulder Mechanics
- 5. University of Southern California- PT541L (Human Gross Anatomy)
 - i. Laboratory Instructor (Fall 2000)
- 6. University of Southern California- PT541L (Human Gross Anatomy)
 - i. Laboratory Instructor (Fall 2001)
- 7. University of Southern California- PT574 (Human Clinical Biomechanics)
 - i. Guest-Lecturer (Spring 2001)
 - 1. Hard and Soft Tissue Mechanics, Shoulder Mechanics
- 8. University of Southern California- PT541L (Human Gross Anatomy)
 - i. Laboratory Instructor (Fall 2002)
- 9. University of Southern California- PT541L (Human Gross Anatomy)
 - i. Laboratory Instructor (Fall 2003)
- 10. University of California San Diego - SOM207 (Human Gross Anatomy)
 - i. Lab-Instructor (Fall 2005)
- 11. University of California San Diego- BENG 271 (Soft Tissue Biomechanics)
 - i. Guest-Lecturer (Winter 2006)
 - ii. Soft Tissue Biomechanics
- 12. University of California San Diego - BENG207 (Skeletal Muscle Mechanics and Physiology)
 - i. Co-Instructor (Spring 2006)
- 13. University of California San Diego - BE187 (Bioengineering Senior Design)
 - i. Instructor (Fall 2006)
- 14. University of California San Diego - SOM207 (Human Gross Anatomy)
 - i. Lab-Instructor (Fall 2006)
- 15. University of California San Diego - BE187 (Bioengineering Senior Design)
 - i. Instructor (Winter 2007)
- 16. University of California San Diego - BE172 (Bioengineering Lab)
 - i. Guest-Lecturer (Winter 2007)
 - 1. Length Tension Relationships in Skeletal Muscle
 - 2. Force Velocity Relationships in Skeletal Muscle

17. University of California San Diego - BENG207 (Skeletal Muscle Mechanics and Physiology)
 - i. Co-Instructor (Spring 2007)
18. University of California San Diego - SPPS241 (Human Gross Anatomy)
 - i. Co-Instructor (Spring 2007)
19. University of California San Diego - BE187 (Bioengineering Senior Design)
 - i. Instructor (Fall 2007)
20. University of California San Diego - SOM207 (Human Gross Anatomy)
 - i. Lab-Instructor (Fall 2007)
21. University of California San Diego - RAD299 (Special Topics in Skeletal Muscle)
 - i. Instructor (Fall 2007)
22. University of California San Diego - BE187 (Bioengineering Senior Design)
 - i. Instructor (Winter 2008)
23. University of California San Diego - BE172 (Bioengineering Lab)
 - i. Guest-Lecturer (Winter 2008)
 1. Length Tension Relationships in Skeletal Muscle
 2. Force Velocity Relationships in Skeletal Muscle
24. University of California San Diego - RAD296 (Special Topics in Skeletal Muscle)
 - i. Instructor (Spring 2008)
25. University of California San Diego - RAD199 (Individual Research)
 - i. Instructor (Spring 2008)
26. University of California San Diego - BISP199 (Individual Research)
 - i. Instructor (Spring 2008)
27. University of California San Diego – Statistics
 - i. Co-Instructor (Summer 2008)
28. University of California San Diego - SOM207 (Human Gross Anatomy)
 - i. Lab-Instructor (Fall 2008)
29. University of California San Diego – BE147A (Bioengineering Senior Design)
 - i. Instructor (Fall 2008)
30. University of California San Diego - BISP199 (Individual Research)
 - i. Instructor (Fall 2008)

31. University of California San Diego BENG 140 (Human Physiology)
 - i. Co-Instructor (Winter 2009)
32. University of California San Diego - BISP199 (Individual Research)
 - i. Instructor (Winter 2009)
33. University of California San Diego – BE147A (Bioengineering Senior Design)
 - i. Instructor (Winter 2009)
34. University of California San Diego – Statistics
 - i. Co-Instructor (Summer 2009)
35. University of California San Diego- RAD299
 - i. Instructor (Fall 2009)
36. University of California San Diego- SOM 207 (Human Gross Anatomy)
 - i. Lab-Instructor (Fall 2009)
37. University of California San Diego – BE147A (Bioengineering Senior Design)
 - i. Instructor (Fall 2009)
38. University of California San Diego – BE 207 (Muscle Physiology)
 - i. Instructor (Spring 2010)
39. University of California San Diego- Statistics
 - i. Co-Instructor (Winter 2010)
40. University of California San Diego- SOM 207 (Human Gross Anatomy)
 - i. Lab-Instructor (Fall 2010)
41. University of California San Diego- BENG 232 (Musculoskeletal Health, Injury, and Disease)
 - i. Guest Lecture- Anatomy and Biomechanics of Rotator Cuff Tears (Spring 2011)
42. University of California San Diego- Statistics
 - i. Co-Instructor (Fall 2011)
43. University of California San Diego- SOM 207 (Human Gross Anatomy)
 - i. Lab-Instructor (Winter 2011)
 - ii. Nominated for Kaiser-Excellence in Teaching Award
44. University of California San Diego- Bioeng 233 (Neuromuscular Physiology)
 - i. Co-Instructor (Spring 2012)
45. University of California San Diego- SPPS 241 (Human Gross Anatomy)

- i. Co-Instructor (Spring 2012)
- 46. University of California San Diego – BENG299 (Independent Study)
 - i. Instructor (Fall 2012)
- 47. University of California San Diego – Ortho296 (Independent Study)
 - i. Instructor (Fall 2012)
- 48. University of California San Diego- Statistics
 - i. Co-Instructor (Fall 2012)
- 49. University of California San Diego- SOM 207 (Human Gross Anatomy)
 - i. Lab-Instructor (Winter 2013)
 - ii. Nominated for Kaiser-Excellence in Teaching Award
- 50. University of California San Diego – BENG299 (Independent Study)
 - i. Instructor (Winter 2013)
- 51. University of California San Diego- SPPS 241 (Human Gross Anatomy)
 - i. MSK-Instructor (Spring 2013)
- 52. University of California San Diego – BENG299 (Independent Study)
 - i. Instructor (Spring 2013)
- 53. University of California San Diego- Statistics
 - i. Co-Instructor (Fall 2013)
- 54. University of California San Diego- BENG 299 (Independent Study)
 - i. Instructor (Fall 2013)
- 55. University of California San Diego- BENG 298L (Independent Study)
 - i. Instructor (Fall 2013)
- 56. University of California San Diego- RAD 296 (Independent Study)
 - i. Instructor (Fall 2013)
- 57. University of California San Diego- SOM 207 (Human Gross Anatomy)
 - i. Lab-Instructor (Winter 2014)
- 58. University of California San Diego- SPPS 241 (Human Gross Anatomy)
 - i. MSK-Instructor (Spring 2014)
- 59. University of California San Diego- Bioeng 233 (Neuromuscular Physiology)
 - i. Co-Instructor (Spring 2014)
- 60. University of California San Diego- Statistics

- i. Co-Instructor (Fall 2014)
- 61. University of California San Diego- SOM 207 (Human Gross Anatomy)
 - i. Lab-Instructor (Winter 2014)
- 62. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Fall 2014), (Berry, Gibbons, Rodriguez Soto, Sato)
- 63. University of California San Diego- RAD 296 (Radiology Independent Study)
 - i. Instructor (Fall 2014), 1 student (Fithian)
- 64. University of California San Diego- RAD 299 (Radiology Independent Study)
 - i. Instructor (Fall 2014), 1 students (Swan)
- 65. University of California San Diego- SOM 207 (Human Gross Anatomy)
 - i. Lab-Instructor (Winter 2015)
- 66. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Winter 2015), (Berry, Gibbons, Rodriguez Soto, Sato)
- 67. University of California San Diego- RAD 299 (Radiology Independent Study)
 - i. Instructor (Winter 2015), 1 students (Swan)
- 68. University of California San Diego- BENG 232 (Musculoskeletal Health, Injury, and Disease). Guest Lecture- Anatomy and Biomechanics of Rotator Cuff Tears (Spring 2015)
- 69. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Spring 2015), (Berry, Gibbons, Rodriguez Soto, Sato)
- 70. University of California San Diego- Statistics
 - i. Co-Instructor (Fall 2015)
- 71. University of California San Diego- SPPS 241 (Human Gross Anatomy)
 - i. MSK-Instructor (Winter 2015)
- 72. University of California San Diego- Statistics
 - i. Co-Instructor (Summer/Fall 2016)
- 73. University of California San Diego- SOM 207 (Human Gross Anatomy)
 - i. Lab-Instructor (Winter 2016). Guest Lecture- Forearm and Hand.
- 74. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Winter 2016), (Berry, Gibbons,)
- 75. University of California San Diego- RAD 299 (Radiology Independent Study)

- i. Instructor (Winter, 2016), 1 students (McKnight)
- 76. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Spring 2016), (Berry, Gibbons)
- 77. University of California San Diego- SPPS 241 (Human Gross Anatomy)
 - i. MSK-Instructor (Spring 2016)
- 78. University of California San Diego- BiSP 199 (Independent Study_)
 - i. Instructor (Spring 2016), (Fane He)
- 79. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Summer 2016), (Berry, Gibbons)
- 80. University of California San Diego- ISP (Medical Student Research)
 - Instructor (Summer 2016), (Onodera)
- 81. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Fall 2016), (Berry, Gibbons)
- 82. University of California San Diego- RAD 296 (Radiology Independent Research)
 - i. Instructor (Fall 2016), (Onodera)
- 83. University of California San Diego- SOM 207 (Human Gross Anatomy)
 - i. Lab-Instructor (Winter 2017).
- 84. University of California San Diego- MAE156 (Mechanical Engineering Design)
 - i. Co-Instructor (Liu, Thomas) (Winter/Spring 2017)
- 85. University of California San Diego- RAD 296 (Radiology Independent Study)
 - i. Instructor (Fall/Winter/Spring 2016-2017), 1 student (Fithian)
- 86. University of California San Diego- BENG 232 (Musculoskeletal Health, Injury, and Disease). Guest Lecture- Anatomy and Biomechanics of Rotator Cuff Tears (Spring 2017)
- 87. University of California San Diego- SPPS 241 (Human Gross Anatomy)
 - i. MSK-Instructor (Spring 2017)
- 88. University of California San Diego- Bioeng 233 (Neuromuscular Physiology)
 - i. Co-Instructor (Spring 2017)
- 89. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Spring 2017), (Berry, Gibbons)
- 90. University of California San Diego- Statistics

- i. Co-Instructor (Summer/Fall 2017)
- 91. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Fall 2017), (Ungerlieder, Gibbons)
- 92. University of California San Diego- RAD 299 (Graduate Research)
 - i. Instructor (Fall 2017), (Xu)
- 93. University of California San Diego- SOMC 226 (Human Gross Anatomy)
 - i. MSK Block Director (Winter 2018)
- 94. University of California San Diego- RAD 299 (Graduate Research)
 - i. Instructor (Winter 2018), (Novatcheva, Elli)
- 95. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Winter 2018), (Gibbons)
- 96. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Spring 2018), (MacEwen, Gibbons)
- 97. University of California San Diego- SOM 299 (ISP)
 - i. Instructor (Summer 2018), (Gong, Wall)
- 98. University of California San Diego- SOM Ortho296 (ISP)
 - i. Instructor (Fall 2018), (Wall)
- 99. University of California San Diego- SOM ORTHO299 (ISP)
 - i. Instructor (Fall 2018), (Onodera)
- 100. University of California San Diego- SOM ORTHO299 (ISP)
 - i. Instructor (Winter 2019), (Onodera)
- 101. University of California San Diego- SOM 226 (Gross Anatomy)
 - i. Course Director (Winter 2019),
- 102. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Spring 2019), (Hyman)
- 103. University of California San Diego- BILD 99 (Independent Research)
 - i. Instructor (Spring 2019), (Major)
- 104. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Fall 2019), (Hyman)
- 105. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Winter 2020), (Hyman, Vasquez-Banuelos, Taghdiri)

- 106. University of California San Diego- SOM 226 (Gross Anatomy)
 - i. Course director (Winter 2020)
- 107. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Spring 2020), (Hyman, Vasquez-Bolanos, Taghdiri)
- 108. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Fall 2020), (Hyman, Taghdiri, Vasquez-Bolanos)
- 109. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Winter 2021), (Taghdiri, Vasquez-Bolanos)
- 110. University of California San Diego- SOM ORTHO299 (ISP)
 - i. Instructor (Winter 2021), (Gong)
- 111. University of California San Diego- SOM 226 (Gross Anatomy)
 - i. Course director (Winter 2021)
- 112. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Spring 2021), (Taghdiri, Vasquez-Bolanos)
 - ii.
- 113. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Fall 2021), (Vasquez-Bolanos)
- 114. University of California San Diego- SOM ORTHO299 (ISP)
 - i. Instructor (Fall 2021), (Borst, Olmert)
- 115. University of California San Diego- SOM 226 (Gross Anatomy)
 - i. Course director (Winter 2022)
 - ii.
- 116. University of California San Diego- BENG 299 (Graduate Research)
 - i. Instructor (Fall 2021), (Vasquez-Bolanos, Kashyap)
- 117.

SUBMITTED GRANTS

NIH R01 (PI:Zemljic-Harpf) 06/01/2022-05/31/2027 (\$1,250,000)

Role Co-I 5%

Statin effects on mTOR signaling, mitochondrial function, and healthy aging

The goal of this project is to understand the influence of common statin medications on cardiac and skeletal muscle metabolic regulation.

DOD/PRMRP (PI: Loh)

\$1.0M

Field-Deployable Stress Fracture Imaging System

04/1/2021-03/28/2024

The purpose of this proposal is to develop and test a new, field deployable, non-ionizing tomographic imaging technique for stress fracture identification in active duty military personnel.

CURRENT GRANT SUPPORT

Surgalign (PI: Ward) 04/01/22-03/28/23 \$25,000
Orthopaedic Surgery Collaborative Research Fund: Ortho/Radiology Spinal Visualization and Quantification

The purpose of this gift is to facilitate the development of automated quantification tools for assessing spinal pathology.

R01 AR080127 A1 XXX (Asahara) \$1.25M
NIH/NIAMS

Role: Consultant

Title: Mechano signals regulating tendon and ligament homeostasis 07/01/2022-06/30/2027

The purpose of this project is to understand the role of Piezo1 in the biomechanical properties of physiology of the Achilles tendon.

K01 AR080257-01 (Jerban S)
NIH/NIAMS

Role: CoMentor/Collaborator

0%

Title: Knee evaluation under mechanical loading by cones ultrashort echo time MR imaging

Goal: To investigate if the early-stage osteoarthritis (OA) affects the mechanical properties of knee joint tissues in an MRI detectable manner prior to morphological alterations.

NuVasive (PI: Ward) 07/30/21-07/29/22 \$100,000

Orthopaedic Surgery Collaborative Research Fund: Implant Development and Smart Instrumentation

The purpose of this gift is to facilitate the development of implant materials and systems to improve graft fusion and fusion, and reduce subsidence.

Motus Biosciences (PI: Ward, Schenk) 05/01/21 – 04/28/22 \$25,000 direct cost

Skeletal Muscle Physiology in Response to Molecular Therapy

Goals: To evaluate a new strategy for targeted molecular therapy to mitigate muscle dysfunction in mice.

DoD W81XWH2010510 (DMRDP) (PI: Shah) 09/30/2020 – 09/29/2025

\$4,465,058 total cost

(Role: Consultant)

Treatment of Severe Nerve Injury by Nerve Lengthening and End-to-End Repair

Project Goals: To evaluate a new strategy for graft-free repair of large peripheral nerve gaps based on nerve lengthening and end to end repair.

NIH/NICHD R01HD100446-01A1 (PI:Shahidi) 09/01/2020-08/31/2025 (\$1,250,000)

The interaction between analgesic medication and exercise-induced muscle hypertrophy in patients with low back pain

The goal of this project is to understand the influence of common analgesic medications on the paraspinal muscle adaptation capacity in response to exercise-based rehabilitation in individuals with low back pain.

NIH ACTRI (2UL1TR001442-06) (PI: Ward) \$15,000
Bone Marrow Aspirate Concentrate vs. Adipose Tissue Derived Stromal Vascular Fraction: Cell Population Characterization by Gene Expression Analysis. 3/1/2020 - 4/30/2021

The purpose of this pilot project/voucher is to compare the proteomic profiles of BAMC and ADSVF in paired human samples.

DOD JW200175 (MPI: Kelly, Ward) 4/01/2021-03/30/2024 \$750,000/yr
Quantification of cervical and lumbar spine kinematics and muscle physiology in swift boat combatant crewman

The purpose of this proposal is to understand the kinematics and soft tissue-structural changes in the lumbar and cervical spines of active duty combat crew members, and the follow these changes over time.

Wu Tsai Performance Initiative (Co-Director) \$20.0M
Multiscale Athlete 01/01/2021-12/31/2031

The Purpose of this initiative is to develop a multiscale modeling and systems-level biology approach to understanding athletic performance and injury prevention.

NIH/NCATS UL1TR001442 (PI Firestein, Device Acceleration Center Director)
\$7,500,000.00 05/01/20-04/30/25 2.4 Cal Months
UC San Diego Clinical and Translational Research Institute (PI Firestein)

The purpose of this project is to support and develop translational and clinical research infrastructure within the San Diego community and between CTSA's nationwide.

Co-Principal Investigator
Sanford Clinical Center \$517,000 07/1/19-06/30/22 1.2 Cal Months
SOAK Trial (Bone Marrow Aspirate-Derived Mesenchymal Stem Cells in Osteoarthritis of the Knee)

The purpose of this grant is to understand the influence of BMAC on knee Osteoarthritis at the biochemical, cellular, imaging, and patient reported outcomes measurement scales. This is an FDA and local IRB approved clinical trial in human patients.

R21 (MPI, Chen Contact PI, Ward PI) 1/1/19-11/30/21
NIH/NIAMS \$275,000

3D Printing of Precision Scaffolds for Volumetric Muscle Regeneration
The goal of this project is to develop new material and 3D printing technologies to enable recovery from volumetric muscle loss. The work will largely be directed at nanoengineering approaches to printing biocompatible tissues, and will then be followed by proof-of-concept studies in a rat model of volumetric muscle loss.

Co-Investigator

1 R01 HD092515A (Alperin, Marianna) 08/01/2017 – 07/31/2022 0.6 calendar
NIH (NICHD) \$1,037,500 (207,500/yr)
Mechanisms and impact of pregnancy-induced adaptations in pelvic floor muscles.

Principal Investigator

1 R01 HD088437-01A1 (Ward, Samuel) 07/01/2017 – 06/31/2022 2.40 calendar
NIH (NICHD) \$1,037,500 (207,500/yr)

Lumbar Spine Muscle Degeneration Inhibits Rehabilitation-Induced Muscle Recovery

The goal of this project is to characterize the structural, physiological, and adaptive potentials of pathological lumbar spine muscles in response to exercise in an attempt to identify sources of resistance to recovery in patients with disc injury.

Principal Investigator

1 R01 AR070830-01 (MPI: Ward, Samuel primary) 08/01/2017 – 07/31/2022 2.40 calendar
NIH (NICHD) \$2,165,000

Non invasive measurements of muscle microstructure assessed by diffusion tensor imaging

Skeletal muscle is important for function, metabolism, and cardiovascular health, and therefore, injury and disease adversely affect quality of life and healthcare costs. Currently, muscle biopsy is the gold standard for diagnosis and monitoring muscle disease and recovery, but is prone to sampling errors and it is invasive. Here we propose a novel strategy to harness diffusion MRI to accurately assess muscle health and pathology.

PAST GRANT SUPPORT

Co-Investigator

Magistro Family Foundation Shahidi (PI) 01/01/2019-12/31/2020
Foundation for Physical Therapy

Functional outcomes and cost effectiveness of high intensity resistance exercise in individuals with low back pain

The goal of this project is to evaluate safety and effectiveness of a high intensity resistance exercise program among a large cohort of patients with low back pain, and compare cost effectiveness with standard of care.

Principal Investigator

1 R21AR072523-A1 (Ward, Samuel, Christman, Karen) 03/07/18 – 12/31/20 1.2 calendar
NIH (NICHD) \$275,000

Promotion of Skeletal Muscle Recovery Using an Extracellular Matrix Hydrogel in a Rabbit Model of Chronic Rotator Cuff Injury.

Tendinopathy results in progressive tendon degeneration and is associated with pain and progressive muscle degeneration and weakness. Surgical repair and rehabilitation yields relatively poor outcomes as muscle size and strength do not recover. Here we propose that chronic muscle atrophy and degeneration are reversible with surgical tendon repair plus an injection of muscle-derived ECM hydrogel.

Co-Investigator

R03 HD094598 (Shahidi, Bahar) 12/1/17-11/30/19 0.6 calendar

NIH (NICHD/NCMRR) \$200,0000

3D Quantification of Exercise-Induced Recruitment in Pathological Paraspinal Muscles

Low back pain (LBP) is a condition that affects a majority of the US population and is responsible for a significant proportion of health care costs and utilization due to the high incidence of recurrent and persistent symptoms. Lumbar spine muscle is compromised in LBP and is a key target for rehabilitation because it is a pivotal component of stability and function. Here, we will characterize the muscle activation patterns during common rehabilitation exercises in a spatially and compositionally sensitive manner in an attempt to identify sources of resistance to recovery in patients with chronic LBP.

Principal Investigator

Katz Family Foundation \$200,000

1/1/17-12/31/19

Bone Marrow Aspirate Concentrate (BMAC) Treatment for Osteoarthritis

The purpose of this project is to characterize BMAC samples using single-cell RNA-SEQ in order to understand the variety and concentration of mesenchymal stem cells present in these therapies.

Principal Investigator

Schaffer Family Foundation \$150,000

1/1/17-12/31/19

Adipose Derived Stromal Vascular Fraction (ADSVF) Treatment of Osteoarthritis

The purpose of this project is to characterize ADSVF samples using single-cell RNA-SEQ in order to understand the variety and concentration of mesenchymal stem cells present in these therapies.

Principal Investigator

1 R01 HD073180-01A1 (Ward, Samuel) 05/01/2013 – 04/30/2019 3.00 calendar

NIH (NICHD) \$1,037,500

The Physiological Basis of Rotator Cuff Muscle Rehabilitation

The goal of this project is to elucidate the structural, mechanical, and physiological consequences of tendinopathy-related muscle atrophy and degeneration after rotator cuff tears in humans. Architectural, passive mechanical, and gene expression profiles will be measured and compared amongst patients with different rotator cuff tear severities.

Co-Principal Investigator

Sanford Clinical Center \$150,000

07/1/18-06/30/19

2.4 Cal Months

Bone Marrow Aspirate Concentrate (BMAC) Treatment for Osteoarthritis

The purpose of this planning grant is to organize and generate preliminary data for a large Program Project involving basic characterization of BMAC, a clinical trial for BMAC for treatment of knee osteoarthritis, an animal model of BMAC for OA, and a regulatory group for navigation of FDA- and UCSD- related implementation barriers.

Co-Investigator

1 R21 (Alperin, Marianna)

09/01/2017 – 08/31/2019

0.6 calendar

NIHHD094566 (NICHD) \$275,000

Injectable Tissue-Specific Extracellular Matrix Hydrogel for Pelvic Skeletal Muscle Regeneration Following Birth Injury.

Sub- Principal Investigator

Epimed (Ilfeld PI) \$55,000 1/1/18-8/31/18

Functional Outcomes after Mixed Motor and Sensory Nerve Cryoablation

The purpose of this project is to test that muscle-related functional consequences of cryoablation-based mixed motor and sensory nerve analgesia. This is a rat model of cryoablation with the intent of moving forward to a human clinical trial of cryoablation for shoulder analgesia.

Principal Investigator

DelNova (Ward, Samuel) 07/01/2017 – 06/30/2018 1.2 calendar

DelNova \$42,800

Recovery of Muscle Function after BTX Reverse Agent

Principal Investigator

DelNova 2 (Ward, Samuel) 07/01/2017 – 06/30/2018 1.2 calendar

DelNova \$30,346

Reversal of BTX-induced paralysis

Principal Investigator

CTSA Bioinformatics Grant (Firestein) 06/01/17 – 05/31/18 0.0 Calendar

NIH (UL1TR001442) \$10,000

The Physiological Basis of Rotator Cuff Muscle Rehabilitation: The influence of strain and exercise on muscle transcriptional activity and epigenetic control of growth.

Co-Investigator

1 R01AG052593 (Villareal) 04/01/2016 – 05/31/2018 0.6 calendar

NIH (NICHD) \$275,000

Epicatechin Treatment for Sarcopenia

Principal Investigator

CTSA subaward

NIH (UL1TR001442, PI Firestein)- sub \$2000 to Ward

Functional outcomes and cost effectiveness of high intensity resistance exercise in individuals with low back pain.

Principal Investigator

Sanford Clinical Center \$150,000 10/1/18-6/30/18 2.4 Cal Months

Bone Marrow Aspirate Concentrate (BMAC) Treatment for Osteoarthritis

The purpose of this planning grant is to organize and generate preliminary data for a large Program Project involving basic characterization of BMAC, a clinical trial for BMAC for treatment of knee osteoarthritis, an animal model of BMAC for OA, and a regulatory group for navigation of FDA- and UCSD- related implementation barriers.

Principal Investigator

2012-5219 PR120576 (Ward, Samuel) 06/01/2013 – 05/31/2018 2.40 calendar
DOD (USAMRMC) \$532,040

Lumbar Spine Musculoskeletal Physiology and Biomechanics During Simulated Military Operations

The goals of this project are to; 1) understand lumbar spine and lumbar disc kinematics during simulated operational conditions, 2) understand the effect of load and body position on spine and disc kinematics when pathology is present, and 3) understand the influence of muscle structure and physiology on lumbar spine kinematics.

Co-Principal Investigator

T32 AR060712 (Sah and Ward)

06/01/2015-04/30/2017

NIH (NIAMS) \$917,444.62

Predocutorial Training in Musculoskeletal Research

The purpose of this Predocutorial Training Program is to facilitate the advancement of outstanding young investigators in Translational Musculoskeletal Research. This resubmission application seeks funding for four predocutorial slots per year to conduct research at the intersection of clinical medicine and surgery and basic science and engineering. The trainees will obtain a Ph.D. degree in Bioengineering or Materials Science and Engineering, typically five years in duration, with two years to be supported by this training grant. Mentorship for the program comes from a core of 21 well-funded and active faculty members in Departments or Divisions at the University of California, San Diego, while the university itself and local hospitals and research institutions offer state of the art research laboratories and resources.

Core Director

1P30AR061303 (Lieber)

09/01/2011-08/31/2017

NIH (NIAMS)

San Diego Skeletal Muscle Research Center (\$2,000,000.00)

The purpose of this Center is to establish a consortium of skeletal muscle scientists between UC San Diego, Sanford-Burham, the Scripps Research Institute, and San Diego State University. The Center provides education, pilot funding, and direct scientific support.

Co-Investigator

DoD DRUIP (Kado)

04/16/16

0 Calendar

Evaluating and Enhancing Muscular Fitness via the Biodex

The purpose of this grant was to purchase a Biodex strength testing apparatus to be placed in EPARC and shared by the Co-Investigators.

Principal Investigator

UCSD Frontier of Innovation Scholars Program (Ward, Samuel) 01/15/2015 – 12/31/16

UCSD (FISP) \$25,000

Enriching Human Life and Society- Reversing Muscle Degeneration after Rotator Cuff Tear

The goal of this project is to better understand the mechanisms leading to rotator cuff muscle degeneration by characterizing the degenerative process precipitated by RC tendon tear using clinical imaging, histology, and biochemical and mechanical evaluation of human RC muscle biopsies to identify therapeutic targets.

Co-Investigator

R21 (Villareal) 09/15/2015-08/31/2016 0.6 Calendar
NIH \$150,000
Epicatechin treatment for sarcopenia
The purpose of this project is to understand the mechanisms of muscle loss prevention using the natural compound, Epicatechin.

Subcontract Co-Principal Investigator

2R01HD031476-11A1 (Kaufman) 07/01/2011 - 06/30/2016
NIH (NICHD) \$364,720
Mayo Foundation for Medical Education & Research
Microsensor for Intramuscular Pressure Measurement
The purpose of this grant is to develop a miniature pressure transducer to measure tissue fluid pressure in skeletal muscle and then to determine the effects of muscle architecture, fascia, limb orientation and type of activation on pressure. The study employs the rabbit tibialis anterior muscle model and consists primarily of in situ muscle physiological experimentation combined with continuum mechanics modeling.

Co-investigator

A6239R (Lieber) 10/01/2012-09/30/2016
Veterans Medical Research Foundation
Mechanical Basis for Tensioning Tendon Transfers (\$700,000.00)
The purpose of this proposal is to measure the *in vivo* properties of muscles commonly used in tendon transfer surgery. We propose to develop a new instrument for measuring sarcomere lengths intraoperatively and to assess post-operative function in these patients.

Co-principal Investigator/Biomechanics Core Director / Imaging Co-director

R24HD050837-01 (Ward/Lieber) 07/2010-06/30/2016
NIH(NICHD)
Medical Rehabilitation Research Infrastructure Program in Muscle (MRRPM)
National Center for Skeletal Muscle Research (\$2,000,000.00)
The purpose of this Center is to provide a resource for skeletal muscle research in the field of rehabilitation. The Center provides education, pilot funding, and direct scientific support.

Co-Principal investigator

1R01AR057393-A1 (Ward/Lieber) 07/01/2010 – 06/30/2015
NIH(NIAMS)
Muscle Biology and Biomechanical Response in Cerebral Palsy (\$1,250,000.00)
The purpose of this study is to measure the passive mechanical, and related gene and protein changes, in the skeletal muscle of children with cerebral Palsy.

Principal investigator

1R01AR057013-A1 (Ward) 07/01/2009-06/30/2015 (NCE)
NIH(NIAMS)
Muscle Structure, Toxin Dose, and Exercise Affect Botulinum Toxin Efficiency (\$1,125,000.00)

The purpose of this study is to quantify the acute and chronic effects of botulinum toxin on skeletal muscle structure and function.

Subcontract Principal Investigator

1R01AR057836 (Thomopolus/Galatz)
NIH(NIMAS)

09/15/2010-06/30/2015

Rotator Cuff Degeneration and Repair (\$184,885.00)

The purpose of this study is to measure the passive mechanical and related protein changes in rat skeletal muscle after rotator cuff tears.

Co-investigator

R34MH086668 (Wetherell)
NIH(NIMH)

07/1/2010-06/30/2013

Exposure Therapy for Fear of Falling in Older Adults (\$450,000.00)

The purpose of this study is to determine if exposure therapy for anxiety improves functional outcomes in patients with Fear of Falling.

Co-investigator

R13 HD074380
NIH (NICHD/NINDS/NIAMS/NIBIB)

07/01/2012-06/30/2013

Regenerative Medicine in Rehabilitation (\$12,000.00)

The purpose of this conference grant is to foster collaborations between established investigators in regenerative medicine and investigators in rehabilitation science. The conference will be jointly sponsored by the APTA Section on Research and the NIH. The conference will be held at the Beaver Hollow Conference Center, Java Center NY Aug 5th- Aug 9th, 2012.

Principal Investigator

Lawrence Dorr Research and Education Foundation 05/2005-05/2006

Intraoperative Sarcomere Length Joint Angle Relationships in the Human Gluteal Muscles.
(\$10,000.00)

Principal Investigator

Private Research Endowment 07/2004-07/2005

Intraoperative Sarcomere Length Joint Angle Relationships in the Human Quadriceps Muscles.
(\$10,000.00)

Principal Investigator

GE Technical Advisory Board 04/2007 – 12/2008

MRI Based Musculoskeletal Modeling of the Upper Extremity (\$122,050.00)

Key Personnel

National Institutes of Health (PI: Lieber) (RO1) HD31476-03 09/2004 – 08/2009

Microsensor for Intramuscular Pressure Measurement (\$2,492,018)

Key Personnel

National Institutes of Health (PI: Lieber) (RO1) AR040050 08/01/2003 – 07/31/2009

Skeletal Muscle Injury: Mechanism, Prevention & Treatment (\$1,250,000)

Co-investigator

National Institutes of Health (PI: Lieber) (RO1) HD048501A 07/2005-06/2010

Direct Determination of Lower Extremity Muscle Design. (\$1,250,000.00)

Co-investigator / Biomechanics Co-director / Radiology Co-director

National Institutes of Health (PI: Lieber) (R24) HD050837-01 07/2005-06/30/2010

Medical Rehabilitation Research Infrastructure Program in Muscle (MRRPM)

National Center for Skeletal Muscle Research (\$2,000,000.00)

Co-investigator

Veterans Medical Research (PI: Lieber) 07/2008 – 06/2011

Mechanical Basis for Surgical Transfer of Forearm Muscles (\$706,000.00)

Co-investigator

National Institutes of Health (R21) (PI: Townsend) NS070296-01 09/30/2009-08/31/2011

Imaging Brain and Movement in ASD. (\$270,296.00)

The purpose of this grant is to use brain and movement imaging to better understand motor function in children with autism spectrum disorders. This exploratory investigation will study repetitive stereotyped movements using a newly developed mobile device and an electrode cap and motion detection suit to further link EEG measures with movements.

Principal Investigator

CC N6311610MP00182 (Ward)

09/01/2010 – 03/15/2013

US Army RDECOM

Navy- Determination of Load Carriage Limits (187,833)

The purpose of this study is to determine the limits of load carriage magnitude and duration on lumbar spine kinematics and disc geometry in Marine Corp soldiers.

Principal Investigator

CC N6311610MP00182 (Ward)

05/01/2011 – 03/15/2013

US Army RDECOM-

Navy- Training for Load Carrying (\$110,000)

The purpose of this study is to determine the effect of load carriage training on lumbar spine kinematics and disc geometry in Marine Corp recruits.

Principal Investigator

Foundation for Physical Therapy

09/2002-09/2003

The Influence of Patella Alta on Knee Extensor Mechanics and Patellofemoral Joint Stress.

(\$15,000.00)

Principal Investigator

Foundation for Physical Therapy

09/2001-09/2002

The Influence of Patella Alta on Knee Extensor Mechanics and Patellofemoral Joint Stress.

(\$7,500.00)

MENTORING

High School Students:

1. Emily Young, La Jolla Country Day, 2013-2014, MIT BME
2. Keaton Blazer, Canyon Crest High School, 2015, Rice BME
3. Nithya Krishnamurthy, Canyon Crest High School, 2016-2017
4. Nicholas Truong, The Bishop's School, 2018-
5. Ryan Hogue, X, 2019-
6. Taber Ball, Cathedral Catholic High School, 2019-
7. Bianca Zorilla, The Bishop's School, 2021-

Undergraduate Students:

1. Laura Smallwood, UCSD Physiology, 2004-2005, PA Samuel Merritt
2. Jaime Ramos, UCSD Bioengineering, 2004-2005, PhD, Post-doc Zurich
3. Nasheed Fakhouri, UCSD Biology, 2005-2006
4. Trevor Kingsbury, UCSD Bioengineering, 2006, DoD Research
5. Kristin Lieber, USC Biology, 2006, PA
6. Jackie Braun, Baylor Biology, 2006
7. Alice Kwan, UCSD Bioengineering, 2007-2008, MS Research
8. Genaro Sepulveda, UCSD Bioengineering, 2007-2008, MSeng USC
9. Sarah Sable, UCSD Bioengineering, 2007-2008, NIH Internship
10. Jaime Duarte, U Florida Bioengineering, 2008, PhD UC Irvine
11. Eric Chehab, UCSD Bioengineering, 2009-2010, PhD Stanford BioEng
12. Nitish Padmanaban, UCSD Bioengineering, 2012, PhD Stanford BioEng
13. Dylan Pomerantz, Pre-Med, 2015, Medical Student University of Albany
14. Callan Parra, Pre-Med, 2015-2017, Medical Student Uniformed Services
15. Fane He, UCSD Biology, 2016-
16. Seth Johnson, Pre-Med, 2017-, MD
17. Tyler Dorobek, Biology and NanoEngineering, 2018-
18. Sabrina Major, Biology and Neuroscience, 2018-
19. Caroline Wolek, Pre-Med, 2018-, MD
20. Ivan Ramirez, Biochemistry, 2020-
21. Laura Long, Biology, 2021-
22. Peter Chebi, Gap Year 2021-2022 (New York Medical College, 2022)
23. Jared Yang, Biology, 2021-
24. Cassie Pheiffer, Mechanical Eng, 2022-

Master's Students:

1. Taylor Winters, UC San Diego Bioengineering, 2007-2009, **(PhD Student- UCSD)**
2. Alisson Deppe (co-advisor), UC San Diego Bioengineering, 2007-2008
3. Brian Thacker (Chair), UC San Diego Bioengineering, 2007-2008, **(PhD Student- TEGA Therapeutics)**
4. Matthew MacKweon, UC San Diego, Bioengineering, 2017-2018, **(PhD Student- University of Minnesota)**
5. Emma Zelus, UCSD Bioengineering, 2018-
6. Behrad Taghdiri, UCSD Bioengineering, 2019-2021 **(Illumina)**

7. Tiana Mack-Miller, UCSD MAS Student, 2021-
8. Chinmayi Kashyap, UCSD Bioengineering, 2021-

DPT Students:

1. Julianna Stewart, MS, SDSU PT, 2015, Research PT Navy Hospital Balboa

Medical Students:

1. Geoff Abrams, UC San Diego, 2004, Ortho Resident Stanford
2. Lionel Gottschalk IV, UC San Diego, 2004, Ortho Resident Case Western
3. Grant Altobelli, UC San Diego, 2007, Ortho Resident Tufts
4. Michael Lim, UC San Diego, 2007-2008, Ortho Resident USC
5. Richard Chang, UC San Diego, 2008
6. Corrine Walker, University of Arizona, 2008
7. Morgan Silldorff (ISP Chair), UC San Diego, 2008-2011, Ortho Resident UC San Diego
8. Noel Lee (ISP Chair), UC San Diego, 2008-2011, Cardiology Resident UC San Diego
9. Xiao Zhao, UC San Diego, 2008-2010
10. Ankur Patel (ISP Chair), UC San Diego, 2010-2011, Ortho Resident UCLA
11. Michael Charles (ISP Chair), UC San Diego, 2010-2011, Ortho Resident USC
12. John Finneran, UC San Diego, 2010-2011, Anesthesiology Resident UCSD
13. Malcolm Swan (ISP Chair/ NIH Summer Student Mentor), UC San Diego, 2012-2015, Anesthesiology Resident U Washington
14. Kristen Hornbeak (ISP Chair), UC San Diego, 2012-2015
15. Vera Lyubasyuk, UC San Diego, 2012-2015, Medicine Resident UCSD
16. Randy McKnight (ISP Chair), UC San Diego, 2013, Ortho Resident Carolina's MC
17. Andrew Fithian (ISP Chair/ NIH Summer Student Mentor), UC San Diego, 2014, Ortho Resident, Stanford
18. Jessica Stambaugh (ISP Chair/ NIH Summer Student Mentor), UC San Diego, 2014, Ortho Resident Navy Hospital Balboa
19. Conway Xu (ISP Chair/ NIH Summer Student Mentor), UC San Diego, 2015-2018, OB-GYN Resident, UCSD
20. Yasmin Aghajan, UC San Diego, 2015
21. Kennan Onodera (ISP Chair/ NIH Summer Student Mentor), UC San Diego, 2015-2016
22. Bhavik Patel, UC San Diego, 2016-2017
23. Gabrielle Cahill (ISP Chair/NIH Summer Student Mentor), UC San Diego, 2017-2018
24. Pelle Wall, UC San Diego (ISP Chair/NIH Summer Student Mentor), 2018-
25. Matt Gong, UC San Diego (ISP Chair), 2018-
26. Matthew Whittaker (ISP Committee), UC San Diego, 2018-
27. Aryan Haratian (Summer Research), UC Irvine, 2018-
28. Johanna Borst (Summer Research), UC San Diego, 2019-
29. Mackenzie Norman (Research Year), Dartmouth, 2019-2020
30. Gabriel Ting, UC San Diego, Co-ISP Advisor, 2018-
31. Bitu Shahrivini, UC San Diego, CO-ISP Advisor, 2019-
32. Shaddy Malik, UC San Diego, NIH/ISP Advisor, 2020-
33. Tony Olmert, UC San Diego, ISP Advisor, 2021-
34. Alis Balayan, UC San Diego, Summer Research, 2021-
35. Pearce Haldeman, UC San Diego, Summer Research, 2021-

36. Liam Fitzgerald, UC San Diego, Mentor, 2021-
37. Justine Panian, UC San Diego, Mentor, 2021-
38. Hannah Wellington, UC San Diego, Mentor, 2022-
39. Emmanuel Elijah, UC San Diego, Mentor, 2022-

Orthopaedic Surgery Residents:

1. William Peace, MD (co-advisor), UC San Diego, 2005-2006
2. Andrew Indresano, MD (co-advisor), UC San Diego, 2008-2009
3. Jonah Hulst, MD, (co-advisor), UC San Diego, 2006-2007
4. Michael Padilla, MD, UC San Diego, 2008-2009
5. Charles Chang, MD, UC San Diego, 2010-2011
6. Alex Choo, MD, UC San Diego, 2011-2012 (**OREF Grant Awardee**)
7. Megan McCarthy, MD, UC San Diego, 2012-2013 (**OREF Grant Awardee**)
8. Morgan Silldorff, MD, UC San Diego, 2013-2014
9. Tim Cheng, MD, UC San Diego, 2014-2015 (**OREF Grant Awardee**)
10. Hassan Azimi, MD, UC San Diego, 2014-2015
11. James Hubbard, MD, UC San Diego, 2015-2016
12. Mario Vargas-Villa, MD, UC San Diego, 2016-2017 (**OREF Grant Awardee**)
13. Andrew Yoo, MD, UC San Diego, 2017-2018
14. Andrew Zogby, MD, UC San Diego, 2018-2019 (**OREF Grant Awardee, OREF Symposium Basic Science Winner**)
15. Isabella Wu, MD, UC San Diego, 2020-2021

PhD Students:

1. Sam Chen, USC Biokinesiology, 2000-2003, **Post-Doc Long Beach VA**
2. Susumu Ota, USC Biokinesiology, 2001-2003, **Asst Professor Japan**
3. Amanda Felder (Committee Member), UC San Diego Bioengineering, 2005-2006, **Illumina**
4. David Gohkin (Committee Member), UC San Diego Bioengineering, 2006
5. Benjamin Wong (Committee member), UC San Diego Bioengineering, 2007-2008
6. Taylor Winters (Chair), UC San Diego Bioengineering, 2009-2012, **Medtronic**
7. Gretchen Meyer (Committee member), UC San Diego Bioeng, 2007-201, **Wash U Faculty**
8. Lucas Smith (Committee member), UC San Diego Bioengineering, 2007-201, **Penn**
9. Elaine Chan (Committee member), UC San Diego Bioengineering, 2010-2011
10. Allison Gilles (Committee member), UC San Diego Bioengineering, 2010-2012
11. Margie Mathewson (Committee member), UC San Diego Bioeng, 2010-2013, **McKinsey**
12. Ana Rodriguez (Chair), UC San Diego Bioengineering, 2011-2015, **Penn post-doc**
13. Eugene Sato (Chair), UC San Diego Bioengineering, 2011-2016, **UCSD**
14. Bradley Hansen (Committee member), UC San Diego Bioengineering, 2011-2014
15. Jennifer Peterson (Committee member), USC Biokinesiology, 2012-2014, **Nebraska**
16. Sachithra Samarawickrame (Committee member), USC Biokinesiology, 2012-2015
17. Victor Cheuy (Committee member), Wash U Movement Science, 2013-2015, **UCSF**
18. David Berry (Chair), UCSD Bioengineering, 2013-2017, **UCSD NanoEng Post Doc**
19. Brian Bober (Committee member), UCSD Bioengineering, 2013-2017
20. Michael Gibbons (Chair), UCSD Bioeng, 2013-2018, **Google Accelerated Science**

a. ****Siebel Scholar 2017****

21. Jeanie Kwok (Committee Member), UCSD Bioengineering, 2014
22. Mai Tran (Committee Member), UCSD Biology, 2015-2019, **U Utah Post-Doc**
23. Sara Hariri (Committee Member), UCSD Bioengineering, 2015-
24. Kelsey Thomas (Committee Member), UCSD Bioengineering, 2015-2016
25. Jessica Ungerleider (Co-Advisor), UCSD Bioengineering, 2015-2018, **MIT Post-Doc**
26. Pengrui Wang (Committee Member), UCSD Material Science and Engineering, 2017-
27. Melissa Hernandez (Committee Member), UCSD Bioengineering, 2017-2019
28. Emma Zelus (Committee Member), UCSD Bioengineering, 2018-
29. Laura Vasquez-Bolanos (Chair), UCSD Bioengineering, 2019-
30. Sydnee Hyman (Chair), UCSD Bioengineering, 2019-2020 (CarlsMed Engineer)
31. David Ortiz (Committee Member), USC Biokinesiology, 2020-
32. Julie Cakici (Committee Member), UCSD Bioethics, 2021-
33. Wisarut (Ben) Kiratitanaporn (Committee Member), UCSD Nanoengineering, 2021-
34. Yujin Park (Committee Member), UCSD Structural Engineering, 2022-

MD/MS Students:

1. Jeannie Su (Chair), UC San Diego, 2013-2014, Urology Resident Yale
2. Jennifer Padwal, UC San Diego, 2017-2018,
3. Javier Chavez, UC San Diego, 2018-2019

MD/PhD Students:

1. Tim Tirrell (Committee Member), UC School of Medicine, 2010-2012
2. Jeremy Sieker (Committee Member), UCSD Medical School, 2019-
3. Alis Balayan, UCSD School of Medicine, 2021-

Post-doctoral Fellows:

1. Viviane Minamoto, PT, PhD, Brazil, 2006
2. Mitsihiko Takahashi, MD, Japan, 2005-2007
3. Akihito Tomiya, MD, Japan, 2007-2008
4. Randy Gastwirt, PhD (co-advisor), UC San Diego, 2008-2010
5. Steven Brown, PhD (co-advisor), UC San Diego, 2008-2010, **University of Guelph**
6. Ki Lee, MD, Korea, 2009-2011
7. Megan Killian, PhD, Wash U, 2010-2014, **Assistant Professor U Delaware**
8. Hiro Okuno, MD, Japan, 2013-2015
9. Damien Bachasson, PhD, France, 2013-2014, **Institute of Myology, Paris.**
10. Jan Hughes-Austin, PhD, UC San Diego, 2014, **Asst Prof UCSD Orthopaedics**
11. Bahar Shahidi, PhD, UC San Diego, 2015-2017, **Asst Prof UCSD Orthopaedics**
12. Erin Englund, PhD, UC San Diego, 2018-, **Asst Prof University of Colorado (AHA Career Development Award)**
13. David Berry, PhD, UC San Diego, 2017- Co-Mentor current
14. Severin Ruoss, PhD, UC San Diego, 2018- current
15. Danny Diaz-Augilar, Clinical Fellow Neurosurgery, scientific co-mentor (2021-)

Assistant Professors:

1. Marcie Harris-Hayes, PT, PhD, Wash U, (2009-2014) **K01, R01 funded.**

2. Sara Gombatto, PT, PhD, San Diego State University, (2013-2017)
3. Simon Tang, PhD, Wash U, (2014-), **K01 funded, R01 funded**
4. Marianna Alperin, MD, UC San Diego Repro Med, (2015-), **R03, R21, R01 funded**
5. Lori Tuttle, PT, PhD, SDSU PT, (2015-), **R01 funded**
6. Michael Harris, PhD, Wash U, (2016-) **K01 funded**
7. Aaron Fields, PhD, UCSF Orthopaedic Surgery, (2015-), **R01 funded**
8. Gretchen Meyer, PhD, Wash U, (2015-), **R21 funded, R01 funded**
9. Bahar Shahidi, PT, PhD, UC San Diego, (2015-), **R03 EI funded, R01 Funded**
10. Jan Hughes-Austin, PT, PhD, UC San Diego, Assistant Professor, **K01 funded, R01 Funded**
11. Michael Harris, PhD, Wash U, (2016-), **K12 Funded**
12. Jolene Rudell, MD, UC San Diego Ophthalmology (2019-), **K12 Funded**
13. Jeremy Orr, MD, UC San Diego (NCLAM Mentee 2020-) **K01 Funded**
14. Saeed Jerban, PhD, UC San Diego, (2020-) K01 Awarded (Primary Mentors: Du/Chang, Role: co-mentor)
15. Ian Foran, MD, UC San Diego, (2020-)
16. Anthony Molina, Department of Medicine, Division of Geriatrics, HS HCOE Primary mentor (2021-)

Associate Professors:

1. Rodney Gabriel, MD, MAS, UC San Diego Anesthesiology
2. Suenghwan Jo, MD, PhD, Chosun University Hospital

UNIVERSITY SERVICE

- 1) McNair Program Research Symposium (Mentor and Presider 2004)
 - a. Student Jaime Ramos
- 2) Mentor, NIH Summer Research Program (2005)
 - a. Student (Geoff Abrams)
 - b. Student (Lionel Gottschalk)
- 3) School of Medicine, Faculty Welfare Council (2005)
 - a. Modeled retirement program- 415M liability
- 4) Annual UCSD Undergraduate Research Conference (2006)
 - a. Presider
- 5) School of Medicine, Faculty Welfare Council (2006)
 - a. Modeled retirement program- 415M liability
- 6) Executive Research Council (2007)
 - a. Department of Orthopaedic Surgery
- 7) Mentor NIH Summer Research program (2007)
 - a. Student Grant Altobelli
- 8) School of Medicine, Faculty Mentor Program (2007)
 - a. Student- Grant Altobelli
- 9) Executive Research Council (2008)
 - a. Department of Orthopaedic Surgery
- 10) McNair Program Research Symposium (Mentor and Presider 2008)
 - a. Student- Jaime Duarte (University of Central Florida)

- 11) School of Medicine, Department of Orthopaedic Surgery (2008)
 - a. Orthopaedic Research Advisory Board
- 12) School of Medicine, Faculty Mentor Program (2008)
 - a. Student- Richard Chang (UCSD)
 - b. Student – Noel Lee (UCSD)
 - c. Student- Morgan Sildorff (UCSD)
 - d. Student- Corrine Walker (UofA)
 - e. Student- Xiao Zhang (UCSD)
- 13) Executive Research Council (2009)
 - a. Department of Orthopaedic Surgery
- 14) School of Medicine, Department of Orthopaedic Surgery (2009)
 - a. Orthopaedic Research Advisory Board
- 15) School of Medicine, Faculty Mentor Program (2009)
 - a. Student- Noel Lee (UCSD)
 - b. Student- Morgan Sildorff (UCSD)
 - c. Student- Xiao Zhang (UCSD)
- 16) UCSD Academic Integrity Board, Alternate Member (2009)
- 17) UCSD Academic Senate (2009)
 - a. Department of Radiology Representative Assembly- Alternate Member
- 18) UCSD Physical Therapy Club (2009)
 - a. Faculty Advisor
- 19) Executive Research Council (2010)
 - a. Department of Orthopaedic Surgery
- 20) School of Medicine, Department of Orthopaedic Surgery (2010)
 - a. Orthopaedic Research Advisory Board
- 21) School of Medicine, Faculty Mentor Program (2010)
 - a. Student- Noel Lee (UCSD)
 - b. Student- Morgan Sildorff (UCSD)
 - c. Student- Xiao Zhang (UCSD)
- 22) UCSD Academic Integrity Board, Faculty Member (2010)
- 23) UCSD Academic Senate (2010)
 - a. Department of Radiology Representative Assembly- Alternate Member
- 24) UCSD 7T MRI Steering Committee (2010)
 - a. Department of Radiology- Steering Committee
- 25) UCSD Physical Therapy Club (2010)
 - a. Faculty Advisor
- 26) UCSD Global Health Initiative (2010)
 - a. Member
- 27) Executive Research Council (2011)
 - a. Department of Orthopaedic Surgery
- 28) School of Medicine, Department of Orthopaedic Surgery (2011)
 - a. Orthopaedic Research Advisory Board
- 29) UCSD Academic Integrity Board, Faculty Member (2011)
- 30) UCSD Academic Senate (2011)
 - a. Department of Radiology Representative Assembly- Alternate Member
- 31) UCSD Global Health Initiative (2011)

- a. Member
- 32) UCSD 7T MRI Steering Committee (2011)
 - a. Department of Radiology- Steering Committee
- 33) UCSD Physical Therapy Club (2011)
 - a. Faculty Advisor
- 34) UCSD Academic Integrity Board, Faculty Member (2011)
- 35) UCSD Academic Senate (2011-2013)
 - a. Department of Radiology Representative Assembly- Member
- 36) UCSD Department of Orthopaedic Surgery
 - a. Resident Interviews (January, 2012)
- 37) School of Medicine, Department of Orthopaedic Surgery (2012)
 - a. Orthopaedic Research Advisory Board
- 38) UCSD Academic Integrity Board, Faculty Member (2012)
- 39) UCSD Department of Orthopaedic Surgery
 - a. Resident Interviews (January, 2013)
- 40) UCSD Academic Integrity Board, Faculty Member (2013)
- 41) UCSD School of Medicine, Department of Orthopaedic Surgery (2013)
 - a. Orthopaedic Research Advisory Board
- 42) UCSD School of Medicine (2013)
 - a. NIH Summer Research Review Committee
- 43) UCSD School of Medicine
 - a. Radiology Research Advisory Committee (2013-2015)
 - b. Radiology Research Committee Chair (2013-2014)
- 44) UCSD Department of Orthopaedic Surgery
 - a. Resident Interviews (January, 2014)
- 45) UCSD School of Medicine, Department of Orthopaedic Surgery (2014)
 - a. Orthopaedic Research Advisory Board
- 46) UCSD School of Medicine
 - a. Radiology Academic Personnel Committee (2014-current)
- 47) UCSD Department of Orthopaedic Surgery (Metabolism)
 - a. Faculty Search Committee Chair (2014)
- 48) UCSD Department of Orthopaedic Surgery
 - a. Interim Vice Chair of Research (2014-current).
- 49) UCSD Department of Orthopaedic Surgery
 - a. UCSD-Navy Orthopaedics Research Day- Reviewer and Moderator (2014)
- 50) UCSD School of Medicine (2013-)
 - a. Orthopaedic Track Director- “Med-to-Grad” program, Engineering in Medicine.
- 51) UCSD School of Medicine (2014-)
 - a. Research Advisory Council
- 52) UCSD Staff Education
 - a. Research A-Z (2015)- Scientific Administration
- 53) UCSD Department of Orthopaedic Surgery
 - a. Resident Committee (2015-2017)
- 54) UCSD Department of Orthopaedic Surgery
 - a. Academic Review Committee (2015-2017)
- 55) UCSD Department of Orthopaedic Surgery

- a. Executive Committee – VC Research (2015- current)
- 56) UCSD Department of Orthopaedic Surgery
 - a. Austrian-Swiss-German Travelling Fellows Symposium Organizer (2015)
- 57) UCSD School of Medicine
 - a. MSTP (PhD Program) Admissions Committee (2015-2016)
- 58) UCSD Department of Orthopaedic Surgery
 - a. UCSD-Navy Orthopaedics Research Day- Reviewer and Moderator (2015)
- 59) UCSD School of Medicine
 - a. Human Anatomical Specimens and Tissue Oversight Committee (2015-)
- 60) UCSD Institute for Engineering in Medicine
 - a. Co-Director, Center for Musculoskeletal Research (2015-)
- 61) UCSD Frontier in Innovation Science Program
 - a. Symposium Moderator (2015)
- 62) UCSD Department of Orthopaedic Surgery (Outcomes)
 - a. Faculty Search Committee Chair (2015-2016)
- 63) UCSD Department of Orthopaedic Surgery
 - a. Resident Interviews (January, 2016)
- 64) UCSD Department of Orthopaedic Surgery
 - a. Orthopaedic Surgery Advisory Council Chair (2015-2016)
- 65) UCSD Department of Orthopaedic Surgery
 - a. ASEAN Travelling Fellows Symposium Organizer (2016)
- 66) UCSD Department of Orthopaedic Surgery (Neuromuscular Physiology)
 - a. Faculty Search Committee Chair (2016)
- 67) UCSD Department of Radiology (2015-)
 - a. FMRI Center Steering Committee
- 68) UCSD Bioengineering
 - a. PhD Student Interviews (2017)
- 69) UCSD School of Medicine
 - a. MSTP (PhD Program) Admissions Committee (2016-2017)
- 70) UCSD School of Medicine (2017)
 - a. NIH Summer Research Review Committee
- 71) UCSD School of Medicine (HASTOC)
 - a. Human Anatomical Specimens and Tissue Executive Committee (2017-)
- 72) UCSD
 - a. Center Launch Seed Funding Review Committee (Nov-Dec, 2017).
- 73) UCSD Bioengineering
 - a. PhD Student Interviews (2018)
- 74) UCSD School of Medicine
 - a. MSTP (PhD Program) Admissions Committee (2017-2018)
- 75) UCSD School of Medicine (HSSAC)
 - a. Space Committee (2018-)
- 76) UCSD School of Medicine (ISC)
 - a. Integrated Science Curriculum Steering Committee (2018-)
- 77) UCSD School of Medicine
 - a. NIH Summer Research Review Committee (2018)
- 78) UCSD Department of Orthopaedic Surgery (Spine Surgeon)

- a. Faculty Search Committee (2018)
- 79) OREF Southwest Regional Resident Research Symposium
 - a. Judge and Moderator (2018)
- 80) UCSD SOM Pilot Project Review Committee (2018)
- 81) UCSD SOM Research Service Core Advisory Board
 - a. Chair (2018-2020)
 - b. Regular Member (2020-)
- 82) UCSD Health Sciences Perioperative Services Advance Analytics Meeting (2018-)
- 83) University of Zurich, Faculty Recruitment External Advisor (2018)
- 84) UCSD Integrated Scientific Curriculum Steering Committee (2019)
- 85) UCSD CTSA KL2 grant reviewer (2019)
- 86) UCSD School of Medicine
 - a. NIH Summer Research Review Committee (2019)
- 87) UCSD School of Medicine
 - a. Co-Chair Department of Medicine Chair Search Committee (2019-2020)
- 88) UCSD Bioengineering
 - a. PhD Student Interviews (2019)
- 89) UCSD School of Medicine
 - a. Department of Surgery, Division of Anatomy Search Committee (2019)
- 90) UCSD School of Medicine
 - a. Summer Grant Review Committee (2019)
- 91) UCSD School of Medicine
 - a. CTRI Executive Committee (2019- current)
- 92) UCSD Department of Orthopaedic Surgery
 - a. Finance Committee (2019- 2021)
- 93) UCSD Department of Radiology
 - a. 7T MRI steering committee (2019-current)
- 94) UCSF Musculoskeletal P30 External Advisory Board (2020-)
- 95) UCSD Campus-Wide COVID Return to Research Committee (April 2020)
- 96) UCSD-San Diego County Health Vaccine Clinic (Petco Park)
- 97) UCSD Innovation Grants for Inclusive Research Excellence- Reviewer (June 2020)
- 98) UCSD School of Medicine
 - a. Associate Dean for Undergraduate Medical Education Search Committee (2020-2021)
- 99) UCSD-SDSU JDP NSF Innovation-Corps Program, Mentor (2020)
- 100) Member, Academic Council at UCSD- Rady Children's Hospital (2020-)
- 101) Member, Biomaterials and Tissue Engineering Center (BMTEC), Institute for Engineering in Medicine, UC San Diego (2020-)
- 102) UCSD-Campus-wide
 - a. ESR Oversight Committee (December 2020-)
- 103) Senior Faculty Mentoring Education Program (May 2021)
 - a. Optimizing Health Sciences Faculty Mentoring Relationships at University of California, San Diego. Conducted by Dr. Angela Byars-Winston, CIMER Faculty Lead for Strategic Initiatives and Professor of Medicine, University of Wisconsin-Madison and Dr. Christine Pfund, CIMER Director, and Senior Scientist, Wisconsin Center for Education Research and Institute for Clinical and Translational Research, University of Wisconsin-Madison.

- 104)UCSD Health Sciences Hispanic Center of Excellence Primary Mentor (2021-)
- 105)Bioengineering PhD Student Interviews (2021)
- 106)UCSD Orthopaedic Surgery Residency Interview Committee (2003-current)
- 107)UCSD Department of Radiology
 - a. Research Strategic Planning Taskforce (2020-2021)
- 108)UCSD Innovation
 - a. Council on Innovation Leadership (COIL) (2021-current)
 - b. Medtech Innovation Council Leader (2021-current)
- 109) Faculty Board Advisor, UC San Diego Chapter of the National Academy of Inventors (2021-)
- 110) La Jolla Arthritis eConference
 - a. Orthopaedic Session Moderator/Organizer (March 29-30th, 2021)
- 111) Department of Radiology, Faculty Search Committee (4/20/21-current)
- 112) Department of Orthopaedic Surgery, BiMonthly Clinical Research Meeting Lead (2021- current)
- 113) UCSD School of Medicine, Faculty Development Fundamentals Workshop (May -July 2021)
- 114) UCSD SOM Science Research Park Programmatic Advisors Committee (Representing Translational Medicine)
- 115) UCSD School of Medicine, Council of Research Vice Chairs (June 2021-)
- 116) UCSD- Health Innovation Expo- Judge
- 117) International Academic Orthopaedic Consortium, member (2021-)
- 118) UCSD School of Medicine, Department of Radiology, Search Committee (2021-)
- 119) IEM, GEM Proposal Review Committee (2021)
- 120) University of Zurich, Faculty Recruitment External Advisor (2021)
- 121) UC San Diego, Department of Orthopaedic Surgery, Animal M&M conference (2021-)
- 122) UC San Diego, Division of Medical Education + Office of Operational Strategic Initiatives (OSI)- Medical Training Strategic Planning (2021-)
- 123) UC San Diego, SOM Research Strategic Planning Leadership Team + Office of Operational Strategic Initiatives (OSI)- SOM Research Strategic Planning Leadership Team (2021-)
- 124) Health Sciences Advancement Meeting, Wu Tsai Human Performance Alliance Presentation, September 21, 2021.
- 125) School of Medicine, Dean's Office Review of Chair's Research Strategic Plan for the Department of Radiology.
- 126) School of Medicine, Strategic Alignment, Tripartite Mission Balance Committee (Jan 2022- current)
- 127) School of Medicine, SOM Executive Cabinet (Jan 2022- current)
- 128) UC San Diego, DARPA Regional Meeting Steering Committee (2022-)
- 129) UCSD Orthopaedic Surgery, Steven Garfin Medical Student Award Review Committee (2021-2022)

PROFESSIONAL ACTIVITIES & MEMBERSHIPS

- 1) American Physical Therapy Association (1996- present)
 - a. Research Subcommittee, Annual Conference Program Committee (8/04–6/07)

- b. Treasurer, Section in Research (2006 - 2010)
 - c. Program Chair, Force Generation Impairments Retreat (2009)
 - d. Vice President, Section on Research (2010-2012)
 - e. President Elect, Section on Research (2011-2012)
 - f. Section Governance Committee (2012-2014)
 - g. President, Section on Research (2011-2012)
 - h. Program Chair, Regenerative Medicine in Rehabilitation Retreat (2012)
 - i. President, Section on Research (2012-2014)
- 2) American Shoulder and Elbow Surgeons (2016-)
 - a. Elected Affiliate Member (2016)
 - b. Travel Award to Closed Meeting (2016)
 - 3) American Institute for Medical and Biological Engineering (AIMBE) (2021-)
 - 4) Foundation for Physical Therapy
 - a. Scientific Review Committee (2011-2013)
 - b. Scientific Review Committee Chair (2012-2013)
 - c. Scientific Advisor Council (2012-2014)
 - d. Strategic Planning Meeting (2013)
 - 5) American College of Sports Medicine (2006-)
 - 6) American Society of Biomechanics (Member: 1999-)
 - a. Abstract Review Committee 2007
 - b. Abstract Review Committee 2008
 - c. Abstract Review Committee 2009
 - d. Abstract Review Committee 2010
 - e. Annual Conference Program Committee 2011
 - f. Awards Committee 2012
 - 7) California Chapter American Physical Therapy Association (1996-present)
 - a. Treasurer: Research Special Interest Group (2002-2003)
 - b. Finance Committee (2002-2003)
 - c. Annual Conference Scientific Review Board (2005)
 - d. Annual Conference Scientific Review Board (2008)
 - e. San Diego District Scholarship Committee (2009)
 - f. Annual Conference Scientific Review Board (2009)
 - g. Annual Conference Scientific Review Board (2010)
 - 8) Christopher and Dana Reeve Foundation (2011- present)
 - a. Grant Review Committee
 - 9) International Society of Biomechanics (Member 2006-present)
 - 10) International Cartilage Research Society (Member 2017- present)
 - 11) National Strength and Conditioning Association (Member: 1996-2003)
 - 12) National Institutes of Health
 - a. Taskforce of Childhood Movement Disorders (March 2005)**
 - 13) Orthopaedic Research Society (Member: 2003-)
 - a. Abstract review committee 2007 annual meeting
 - b. Abstract review committee 2007 combined meeting
 - c. Abstract review committee 2008 annual meeting
 - d. Muscle/Nerve Session Moderator 2008 annual meeting
 - e. Chair- Muscle/Nerve Topic Review Committee (2008-2010)

- f. Orthopaedic Basic Science Course Instructor (2014)
 - g. Orthopaedic Basic Science Course Instructor (2015)
 - h. Shoulder and Elbow II- Moderator (2015)
 - i. Strategic Planning Discussion , ORS (2015)
 - j. Reviewer- Shoulder and Elbow Committee (2016)
 - k. Spine Study Section Moderator (2018)
- 14) Minimally Invasive Surgery of the Spine Society (Founding Member: 2006-)
 - 15) International Patellofemoral Study Group
 - a. Abstract Review Committee (2008)
 - b. Program Committee (San Diego, 2011)
 - 16) California State University Long Beach Department of Physical Therapy
 - a. Advisory Board of Directors (2010-current)
 - 17) Natural Sciences and Engineering Research Council of Canada (NSERC)
 - a. Grant reviewer (2011- current)
 - 18) San Diego State University, Physical Therapy
 - a. Program Advisory Council (2012-2014)
 - 19) National Institutes of Health
 - a. Co-Chair, Scientific Review Group- **ZRG1 F10B Physiology and Pathobiology of Musculoskeletal, Oral, and Skin Systems**
 - 20) National Institutes of Health
 - a. Special Emphasis Panel/Scientific Review Group **2015/01 ZHD1 DSR-T (02)**
 - 21) National Institutes of Health
 - a. Scientific Review Group **2015/01 ZHD1 DRG-D 13**
 - 22) San Diego Skeletal Muscle Center
 - a. Program Director, Cure Duchenne Network Symposium (June 5-6, 2015).
 - 23) American Shoulder and Elbow Surgeons
 - a. Affiliate Member (10/2015- current)
 - 24) Orthopaedic Research and Education Foundation
 - a. OREF Prevention of Musculoskeletal Youth Sports Injuries Grant reviewer (2016)
 - b. OREF Southwest Regional Research Conference Judge (2016)
 - 25) National Basketball Association (NBA)
 - a. 2016 Tendinopathy Grant Reviewer
 - 26) National Institutes of Health
 - a. **Rehabilitation Research at NIH (May 2016)**
 - 27) Orthopaedic Research and Education Foundation
 - a. OREF Young Investigator Award Grant reviewer (2016)
 - 28) National Institutes of Health
 - a. Special Emphasis Panel 2016/11 **ZRG1 MOSS K02 SEP**
 - 29) National Basketball Association (NBA)
 - a. 2016 Acute Myotendinous Injury Grant Reviewer
 - 30) National Institutes of Health
 - a. Musculoskeletal, Oral and Skin Sciences (**MOSS**) **IRG** (Oct 2017)
 - 31) National Institutes of Health
 - a. **Musculoskeletal Rehabilitation Sciences Study Section** (Oct 2017)
 - 32) Department of Defense

- a. P2RMIS Discovery Award Study Section Chair (September 2017)
- 33) National Institutes of Health
 - i. NICHD Educational Grants 2018/01 **ZHD1 DSR-T (02)** 1 (November 2017)
- 34) National Institutes of Health
 - a. **Musculoskeletal Rehabilitation Sciences Study Section** (June 2018)
- 35) National Institutes of Health
 - a. Clinical Trial Readiness for Rare Neuromuscular Diseases (**ZNS1 SRB-A (18)**) (July 18)
- 36) San Diego Spine Foundation
 - a. Board Member (2019)
- 37) National Institutes of Health
 - a. Chair, Skeletal Muscle Biology Special Emphasis Panel (**2019/10 ZRG1 MOSS-V (02) M**) (July 2019)
- 38) Musculoskeletal Gordon Research Conference 2022
 - a. Biology and Biomechanics in Aging Session Chair
- 39) National Institutes of Health
 - a. Standing Member Musculoskeletal Rehabilitation Sciences Study Section (July 2020-June 2024).
 - b. Co-Chair Feb 2021, Oct 2021, Feb 2022.
 - c. Chair July 2022-June 2024
- 40) La Jolla Arthritis eConference
 - a. Orthopaedic Session Moderator/Organizer (March 29-30th, 2021)
- 41) Airlangga University School of Medicine, Indonesia.
 - a. Visiting Professor, September 2021.
- 42) DoD
 - a. FY21 PRORP Stakeholder's Meeting Participant.
- 43)

PEER-REVIEW ACTIVITIES

Journals

American Journal of Physical Medicine and Rehabilitation (2010 -)

American Journal of Physiology- Cell (2016-)

Annals of Biomedical Engineering (2013-)

Archives of Physical Medicine and Rehabilitation (2005-)

Biomechanics and Modeling in Mechanobiology (2014-)

Cell (2020-)

Clinical Anatomy (2005-)

Clinical Biomechanics (2005-)

Clinical Orthopaedics and Related Research (2003-)

Developmental Medicine and Child Neurology (2010-)

Journal of Applied Biomechanics (2006-)

Journal of Applied Physiology (2005-)

Journal of Biomechanics (2005-)

Journal of Biomechanical Engineering (2015-)

Journal of Bone and Joint Surgery (2008-)

Journal of Experimental Biology (2005-)

Journal of Hand Surgery (Am) (2014-)

Journal of Magnetic Resonance Imaging (2012-)

Physics in Medicine and Biology (2008-)

Journal of Morphology (2013-)

Journal of Neurophysiology (2009 -)

Journal of Neurological Physical Therapy (2014-)

Journal of Orthopaedic Research (2009 -)

Journal of Orthopaedic and Sports Physical Therapy (2003-)

Editorial Review Board Member (2008-2016)

Journal of Physiology (2006-)

Journal of Shoulder and Elbow Surgery (2013-)

Neurorehabilitation and Neurorepair (2012-)

Physical Therapy Journal (2011-2021)

Editorial Board Member (2014-2015)

Decision Editor (2015-2016)

Deputy Editor (2016- 2021)

Point of View, Perspective, Diversity

Regenerative Medicine (2018-)

Science Translational Medicine (2014-)

Scoliosis and Spinal Disorders (2016-)

The Spine Journal (2018-)

Tissue Engineering (2019-)

COMMUNITY SERVICE ORGANIZATIONS

1) Operation Walk

Havana, Cuba. (1996)

Katmandu, Nepal. (2000)

Cebu, Philippines. (2001)

- Santo Domingo, Dominican Republic. (2002)
- La Paz, Mexico. (2002)
- Antigua, Guatemala (2004)
- Panama City, Panama (2005)
- Lima, Peru (2007)
- Antigua, Guatemala (2013)
- Hanoi, Vietnam (2014)
- Havana, Cuba (2015)
- Antigua, Guatemala (2017)
- Havana, Cuba (2019)
- Antigua, Guatemala (2020)
- 2) San Diego Fine Woodworkers Association (2007-)
 - a. Toys for kids (Rady Children's Hospital) (2008,2009)
 - b. Design in Wood Show, San Diego County Fair (2008-2012)
 - c. Founding Member, Community Wood Shop (2016-)
- 3) UCSD- Sweetwater High School Science Fair Judge (2010)
- 4) UCSD- El Segundo High School Guest Science Instructor (2011)
- 5) Canyon Crest High School- Careers STEM Sciences Invited Speaker (October 2016)
- 6) San Diego Fine Woodworkers Association- Community Shop Founding Member (2016)
- 7) San Diego Spine Foundation Board Member (2019)
- 8) Operation Walk Los Angeles Board of Directors (2019-)
- 9) UCSD-San Diego County Health Vaccine Clinic (Petco Park)(2021)
- 10)

REFERENCES

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