

CURRICULUM VITAE
William R. Thompson, PT, DPT, PhD

CONTACT INFORMATION

49 Boone Village
Suite 199
Zionsville, IN 46077

Phone: (302) 382-4159
Email: wthomp99@gmail.com

SPECIFIC AREAS OF EXPERTISE

- Physical therapy standard of care in acute care, outpatient, sub-acute, and long-term care settings
- Balance and falls
- Rehabilitation related to amputation and prosthetics
- Geriatrics
- Orthopedics
- Neurological conditions
- Joint replacement
- Transfers and safety precautions/considerations
- Fractures
- Musculoskeletal health and disease
- Gabapentin, neurontin, pregabalin, lyrica
- Molecular biology, cell biology, and genetics
- Musculoskeletal health and disease

EDUCATION

Postdoctoral Fellowship	Endocrinology, Mechanical Signaling in Bone (2014) University of North Carolina, Chapel Hill, NC
Postdoctoral Fellowship	Biological Sciences (2011) University of Delaware, Newark, DE
Doctor of Philosophy	Biomechanics and Movement Science (2011) – 3.96 GPA Emphasis in Molecular Biology and Genetics University of Delaware, Newark, DE
Doctor of Physical Therapy	Physical Therapy (2007) – 3.95 GPA University of Delaware, Newark, DE
Bachelor of Science	Biochemistry (2004) – 4.0 GPA Health Sciences (minor) Religion (minor) Lee University, Cleveland, TN
Research Internship	Pulmonary and Critical Care Medicine (2002) Johns Hopkins University School of Medicine, Baltimore, MD

CLINICAL POSITIONS

2023 – Present	Physical Therapist, Witham Hospital, Lebanon, IN 46052 <ul style="list-style-type: none">○ <i>Acute care, extended care, & skilled nursing environments. Orthopedic trauma, joint replacement, medical/surgical conditions, fractures, falls</i>
2014 – 2023	Physical Therapist, Indiana University Methodist Hospital, Indianapolis, IN 46202 <ul style="list-style-type: none">○ <i>Acute care environment. Orthopedic trauma, joint replacement, medical/surgical conditions, cardiovascular surgery, fractures, falls</i>
2007 – 2021	Physical Therapist, Bayhealth Kent General Hospital, Dover, DE 19901 <ul style="list-style-type: none">○ <i>Acute care environment. Orthopedic trauma, joint replacement, medical/surgical conditions, cardiovascular surgery, fractures, falls, neurological conditions (i.e., stroke, TIA)</i>
2012 – 2014	Physical Therapist, Central Carolina Hospital, Sanford, NC 27237 <ul style="list-style-type: none">○ <i>Acute care environment. Orthopedic trauma, joint replacement, medical/surgical conditions, cardiovascular conditions, fractures, falls, neurological conditions (i.e., stroke, TIA)</i>
2011 – 2014	Physical Therapist, University of North Carolina Hospitals, Chapel Hill, NC 27514 <ul style="list-style-type: none">○ <i>Acute care environment. Orthopedic trauma, joint replacement, medical/surgical conditions, cardiovascular surgery, fractures, falls, neurological conditions (i.e., stroke, TIA)</i>
2007 – 2009	Physical Therapist & Clinical Instructor, University of Delaware Neurological and Older Adult Clinic, Newark, DE 19716 <ul style="list-style-type: none">○ <i>Treating geriatric patients in outpatient setting with neurological conditions (i.e., stroke, parkinson's disease, multiple sclerosis) orthopedic injuries, joint replacement</i>

PROFESSIONAL LICENSES AND CERTIFICATIONS

2022 – Present	Alabama State Physical Therapy License:	PTH10684
2014 – Present	Indiana State Physical Therapy License:	05011609A
2007 – Present	American Physical Therapy Association Credentialed Clinical Instructor	
2007 – 2023	Delaware State Physical Therapy License:	J1-0002198
2011 – 2014	North Carolina State Physical Therapy License:	DP13293

ACADEMIC APPOINTMENTS

2022 – Present	Co-Director, Musculoskeletal Health PhD Program, Indiana Center for Musculoskeletal Health, School of Medicine, Indiana University, Indianapolis, IN 46202
2020 – Present	Associate Professor, Department of Physical Therapy, School of Health & Human Sciences, Indiana University, Indianapolis, IN 46202
2020 – Present	Adjunct Associate Professor, Department of Anatomy & Cell Biology, School of Medicine, Indiana University, Indianapolis, IN 46202

2020 – Present	Adjunct Associate Professor, College of Osteopathic Medicine, Marian University, Indianapolis, IN 46202
2014 – Present	Director – Molecular Biomechanics Research Lab, Indiana University, Indianapolis, IN 46202
2017 – Present	Director – Mechanobiology Core Facility, Indiana Center for Musculoskeletal Health, School of Medicine, Indiana University, Indianapolis, IN 46202
2022	Adjunct Associate Professor, Department of Pathology, Division of Molecular & Cellular Pathology, Heersink School of Medicine, University of Alabama, Birmingham, AL 35294
2021 – 2022	Associate Professor, Department of Physical Therapy, School of Health Professions, University of Alabama, Birmingham, AL 35294
2021 – 2022	Associate Professor, Department of Occupational Therapy, School of Health Professions, University of Alabama, Birmingham, AL 35294
2021 – 2022	Director, PhD Program in Rehabilitation Sciences, School of Health Professions, University of Alabama, Birmingham, AL 35294
2021 – 2022	Associate Scientist, Comprehensive Arthritis, Musculoskeletal, Bone, and Autoimmunity Center, University of Alabama, Birmingham, AL 35294
2021 – 2022	Scientist, Center for Engagement in Disability Health & Rehabilitation Sciences, University of Alabama, Birmingham, AL 35294
2018 – 2020	Assistant Professor, Department of Physical Therapy, School of Health & Human Sciences, Indiana University, Indianapolis, IN 46202
2014 – 2018	Assistant Professor, Department of Physical Therapy, School of Health and Rehabilitation Sciences, Indiana University, Indianapolis, IN 46202
2014 – 2020	Adjunct Assistant Professor, Department of Anatomy & Cell Biology, School of Medicine, Indiana University, Indianapolis, IN 46202
2018 – 2020	Adjunct Assistant Professor, College of Osteopathic Medicine, Marian University, Indianapolis, IN 46202

PROFESSIONAL DEVELOPMENT & CONTINUING EDUCATION

- 2022 Components Deeper Dive K1-K2 Knees & Feet – Oct 7, SRT Prosthetics
- 2022 Amputee Gait Analysis & Gait Intervention Ideas Linked to Common Gait Abnormalities for Patients with Lower Extremity Limb Loss – Sep 22, SRT Prosthetics
- 2022 Community Reintegration for Patients Living with Limb Loss – Aug 25, SRT Prosthetics
- 2021 Therapy Implications of New Lower Extremity Prosthetic Socket Design: Connect® TF Socket – Feb 10, SRT Prosthetics
- 2021 Overview of Lower Extremity Orthotics – Feb 10, SRT Prosthetics
- 2018 Excellence in Research Workshop – Oct 9, IUPUI
- 2018 Enhancing Your Scientific Career: Unlocking Your Inner Mentor – Mar-Apr, IUPUI
- 2017 Dossier Preparation – Second Session - Workshop – Nov 16, Campus Center, IUPUI
- 2017 CTL Curriculum Enhancement Grant Symposium, Oct 12, IUPUI

2017 Össur Academy Pro Care Amputee Workshop – Bob Gailey, Sep 20-21, SRT Prosthetics
 2016 Dossier Preparation Workshop – Nov 22, IUPUI
 2016 Excellence in Research Workshop – Oct 11, IUPUI
 2016 Excellence in Teaching Workshop – Aug 30, IUPUI
 2015 Excellence in Research Workshop – Dec 8, IUPUI
 2015 Scientific Writing from the Reader’s Perspective – George Gopen, Jul 28-29, IUPUI

PROFESSIONAL ORGANIZATION MEMBERSHIPS

2019 – Present	Orthopaedic Research Society
2017 – Present	Indiana Center for Musculoskeletal Health
2014 – Present	Indiana Physical Therapy Association
2015 – Present	Indiana University Biomechanics and Biomaterials Research Center
2015 – Present	Indiana University Melvin and Bren Simon Cancer Center
2015 – Present	Indiana University Tumor Microenvironment and Metastasis Program
2016 – Present	Cancer and Bone Society
2014 – Present	Research Section – APTA
2009 – Present	American Society of Bone and Mineral Research
2005 – Present	Geriatrics Section – APTA
2004 – Present	American Physical Therapy Association
2003 – Present	Alpha Chi National Honors Society
2021 – 2022	University of Alabama Center for Exercise Medicine
2021 – 2022	University of Alabama Nathan Shock Center of Excellence in the Basic Biology of Aging
2010 – 2011	American Society of Biomechanics

HONORS AND AWARDS

Research

2025	Fellow of the American Society of Bone and Mineral Research
2024	Excellence in Sustained Research Award , Indiana University – School of Health & Human Sciences
2021	IUPUI Research Trailblazer Award , Indiana University
2020	ICMH Paper of the Year , Indiana University – Indiana Center for Musculoskeletal Health – <i>“Mechanical Suppression of Breast Cancer Cell Invasion and Paracrine Signaling to Osteoclasts Requires Nucleo-Cytoskeletal Connectivity”</i>
2020	Excellence in Emerging Research Award , Indiana University – School of Health & Human Sciences
2017	Excellence in Emerging Research Award , Indiana University – School of Health & Rehabilitation Sciences
2017	John Haddad Young Investigator Award , Advances in Mineral Metabolism – American Society of Bone & Mineral Research

- 2015 **Excellence in Emerging Research and Scholarship Award**, Indiana University – School of Health & Rehabilitation Sciences
- 2015 **Young Investigator Travel Award**, American Society of Bone & Mineral Research
- 2015 **Alice L. Jee Young Investigator Award**, Orthopedic Research Society’s 45th Annual International Sun Valley Workshop
- 2014 **Outstanding Abstract Award**, International Congress of Endocrinology & Endocrine Society
- 2013 **Selected Attendee**, Endocrine Fellows Foundation Workshop
- 2011 **Young Investigator Travel Award**, American Society of Bone & Mineral Research
- 2010 – 2011 **Dissertation Fellowship Award**, University of Delaware
- 2010 **Viva J. Erickson Award for Extraordinary Merit and Leadership**, Foundation for Physical Therapy
- 2010 **President’s Poster Award**, American Society of Bone & Mineral Research
- 2010 **Best Paper Award**, International Bone Fluid Flow Conference
- 2009 – 2010 **Graduate Fellowship Award**, University of Delaware
- 2009 **Adopt-A-Doc Award**, American Physical Therapy Assoc Geriatrics Section

Teaching

- 2016 **Excellence in Emerging Teaching Award**, Indiana University School of Health & Rehabilitation Sciences

Service

- 2020 **Excellence in Emerging Service Award**, Indiana University School of Health & Human Sciences

Academic Honors

- 2007 – 2008 **Florence P. Kendall Award**, Foundation for Physical Therapy
- 2001, '02, '03, '04 **Dean’s List with Honors**, Lee University
- 2001, '02, '03, '04 **Dean’s Scholar Award**, Lee University
- 2001, '02, '03, '04 **Honors Scholar Award**, Lee University
- 2004 **Summa Cum Laude**, Bachelor of Science, Biochemistry, Lee University
- 2004 **Collegiate All-American Scholar**, Lee University
- 2003, 2004 **National Dean’s List Honor**, Lee University
- 2003 **2nd Place Research Presentation**, TN Academy of Science Symposium
- 2000 **Excellence in Writing and Composition Award**, Lee University

TEACHING

GRADUATE COURSES TAUGHT

Department of Physical Therapy, Indiana University School of Health and Rehab Sciences

SHRS P501	Case Series Rounds I	1 credit hour (lecture)
SHRS P601	Case Series Rounds II	1 credit hour (lecture)
SHRS P701	Case Series Rounds III	1 credit hour (lecture)
SHRS P515	PT Examination & Interventions I	3 credit hour (lecture/lab)
SHRS P526	PT Examination & Interventions II	5 credit hour (lecture/lab)
SHRS P661	Prosthetics & Orthotics Interventions	2 credit hour (lecture)

Department of Anatomy & Cell Biology, Indiana University School of Medicine

GRDM G819	Basic Bone Biology	3 credit hour (lecture)
GRDM G801	Cell Biology of NeuroMusculoSkeletal System	4 credit hour (lecture)

Department of Physical Therapy, University of Delaware College of Health Sciences

PHYT 622	Clinical Gross Anatomy	8 credit hour (lecture/lab)
PHYT 604	Functional Anatomy & Biomechanics	3 credit hour (lecture)

Department of Physical Therapy, University of North Carolina School of Medicine

PHYT 730	Biomechanics & Kinesiology	3 credit hour (lecture)
----------	----------------------------	-------------------------

Department of Mechanical Engineering, Boise State University

ME 602	Mechanobiology	3 credit hour (lecture)
--------	----------------	-------------------------

CURRICULUM/COURSE DEVELOPMENT

Course Design and Development

SHRS P501	Case Series Rounds I	Lecture	1 credit hour
SHRS P601	Case Series Rounds II	Lecture	1 credit hour
SHRS P701	Case Series Rounds III	Lecture	1 credit hour

GRANTS/SCHOLARLY ACTIVITY IN TEACHING

Completed Teaching Grants

2018	Curriculum Enhancement Grant – Travel Grant Role: Principal Investigator Agency: Indiana University Center for Teaching and Learning Amount: \$1,000
2016 – 2017	Creation of Case Series Rounds Courses for Enhancement of Clinical Decision Making and Interdisciplinary Interactions Role: Principal Investigator, Co-PIs: Peter Altenburger, Amy Bayliss, Valerie Strunk

Agency: Indiana University Center for Teaching and Learning –
Curriculum Enhancement Grant
Amount: \$30,000

Teaching Presentations (Includes local, national, and international conferences/symposiums)

Poster Presentations

1. **Thompson WR**, Bayliss AJ, Strunk VA, Manal TJ, Altenburger PA. Enhancing Clinical Decision-Making: Making the Case for a Case Rounds Seminar Course. *Indiana University Curriculum Enhancement Symposium*. Indianapolis, IN, 2017.
2. Clark K, Altenburger PA, Strunk VA, **Thompson WR**, Bayliss AJ. The Development of Clinical Decision-Making Using a Case Rounds Seminar Course. *APTA Combined Sections Meeting*. District of Columbia, 2019.

Platform Presentations

3. **Thompson WR**, Bayliss AJ, Strunk VA, Manal TJ, Altenburger PA. Enhancing Clinical Decision-Making: Making the Case for a Case Rounds Seminar Course. *American Physical Therapy Association Combined Sections Meeting*. New Orleans, LA, 2018.

Symposium Presentations

4. **Thompson WR**. Molecular Biology – Making the PT Connection. Segment of a symposium titled “Of Molecules, Mice, & Men”. *APTA Combined Sections Meeting*. District of Columbia, 2019.

RESEARCH/CREATIVE ACTIVITY

Active Research Grants

- | | |
|-------------|--|
| 2024 – 2026 | Improving T-Cell Immunotherapy by Mechanical Stimulation
Role: Co-PI, MPI: Hiroki Yokota, Mateusz Opyrchal, Lionel Apetoh, Jing Liu, and Andy Chen
Agency: IU Simon Cancer Center Experimental & Developmental Therapeutics Research Program
Grant #: N/A, Dates: 7/1/24 – 6/30/26
Amount: \$50,000 |
| 2024 – 2025 | Development of an Organoid-on-Chip for Bone Cancer Metastasis
Role: Co-Investigator, MPI: Hiroki Yokota and Jing Liu
Agency: IU Simon Cancer Center New Technologies Shark Tank
Grant #: N/A
Amount: \$17,000 |
| 2024 – 2025 | Restoration of Perlecan Tethers via dCas9 Transcriptional Activation
Role: Co-Principal Investigator, MPI: Julia Hum
Agency: Marian University Faculty Research Development Grant
Grant #: N/A, Dates: 07/08/2024 – 05/09/2025
Amount: \$5,000 |

- 2024 – 2025 **Activation of Cacna2d1 Expression in Osteocytes to Restore Age-Related Loss of Mechanosensation**
 Role: Co-Principal Investigator, MPI: Julia Hum
 Agency: Marian University Faculty Research Development Grant
 Grant #: N/A, Dates: 07/08/2024 – 05/09/2025
 Amount: \$5,000
- 2023 – 2024 **Effects of Gabapentin and the $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit on Skeletal Muscle**
 Role: Principal Investigator, Co-PI: Joshua Huot
 Agency: Indiana Center for Musculoskeletal Health
 Mechanism: ICMH Pilot Grant
 Grant #: N/A, Dates: 10/01/23 – 9/30/23
 Amount: \$50,000
- 2023 – 2024 **Generation of a Transgenic Mouse to Drive/Restore Perlecan Expression**
 Role: Principal Investigator
 Agency: Indiana University Clinical and Translational Sciences Institute
 Mechanism: Core Pilot Grant
 Grant #: UL1 TR001108, Dates: 01/01/23 – 12/31/24
 Amount: \$10,000
- 2018 – 2025 **Osteocyte Mechanotransduction and the Gabapentin-Sensitive Matrix-Channel Tethering Complex**
 Role: Principal Investigator
 Agency: NIH (NIAMS)
 Impact Score (A0): 28, Percentile: 10.0
 Grant #: 1R01AR074473-01, Dates: 09/20/18 – 06/30/25 (admin extension/NCE)
 Amount: \$2,854,673
- Completed Research Grants
- 2023 **Acquisition of a High-Resolution X-Ray Tomographer System for Multi-School Research Expansion**
 Role: Principal Investigator
 Agency: Indiana University
 Mechanism: Research Equipment Fund
 Grant #: N/A, Dates: N/A
 Amount: \$356,405
- 2018 – 2023 **Loading and Drug Synergy Protect Bone from Pathological Collagen Synthesis**
 Role: Co-Investigator, PI: Joseph Wallace
 Agency: NIH (NIAMS)
 Impact Score (A1): 22, Percentile: 6.0
 Grant #: 1R01AR072609-01, Dates: 07/01/18 – 06/30/23
 Amount: \$1,968,750 (\$23,492 allocated to Thompson)

- 2021 – 2023 **Generation of a Novel Mouse Model to Restore/Overexpress the $\alpha_2\delta_1$ VSCC Subunit**
 Role: Principal Investigator
 Agency: Indiana University Clinical and Translational Sciences Institute
 Mechanism: Core Pilot Grant
 Grant #: UL1 TR001108, Dates: 01/15/21 – 01/14/23
 Amount: \$10,000
- 2021 – 2022 **Skeletal Consequences of Osteocyte-Specific Deletion of PLN**
 Role: Co-Principal Investigator, PI: Julia Hum
 Agency: Marian University Faculty Research Development Grant
 Grant #: FRD 2102, Dates: 02/01/2021 – 01/31/2022
 Amount: \$5,052
- 2021 – 2022 **Myosin-Mediated Recruitment of mTORC2 to Focal Adhesions in Mesenchymal Stem Cells**
 Role: Co-Principal Investigator, PI: Jonathan Lowery
 Agency: Marian University Faculty Research Development Grant
 Grant #: FRD 2107, Dates: 02/01/2021 – 01/31/2022
 Amount: \$5,000
- 2021 – 2022 **Regulation of Mechanical Lineage Commitment by Myosin1C**
 Role: Co-Principal Investigator, PI: Jonathan Lowery
 Agency: Marian University Faculty Research Development Grant
 Grant #: FRD 2108, Dates: 02/01/2021 – 01/31/2022
 Amount: \$3,200
- 2019 – 2022 **Regulation of Skeletal Development and Mechanosensitivity by the $\alpha_2\delta_1$ Auxiliary Voltage Sensitive Calcium Channel Subunit**
 Role: Mentor, PI: Christian Wright
 Agency: NIH (NIAMS)
 Impact Score (A0): 23, Percentile: 16.0
 Grant #: 1F32AR074893-01, Dates: 05/01/2019 – 07/30/2021
 Amount: \$148,898
- 2020 **Regulation of Osteoclast Differentiation by the Auxiliary $\alpha_2\delta_1$ Subunit**
 Role: Co-Principal Investigator, PI: Julia Hum
 Agency: Marian University Faculty Research Development Grant
 Grant #: N/A, Dates: 02/01/2020 – 06/15/2020
 Amount: \$5,000
- 2020 **Regulation of Osteoclast Activity by Gabapentin**
 Role: Co-Principal Investigator, PI: Julia Hum
 Agency: Marian University Faculty Research Development Grant
 Grant #: N/A, Dates: 02/01/2020 – 06/15/2020
 Amount: \$5,000
- 2020 **Age-Dependent Changes in Matrix/Channel Mediated Osteocyte Mechanosensation**
 Role: Co-mentor, PI: Jennifer Coulombe, Co-mentor: Virginia Ferguson
 Agency: Orthopedic Research Society, Collaborative Exchange Grant

Grant #: N/A
Amount: \$5,836

2019 – 2020 **Long-Term Benefit of Exercise During Youth on Proximal Femur Strength in Women – 2nd RENEWAL**
Role: Principal Investigator
Agency: NIH (NIAMS), Loan Repayment Program
Grant #: N/A, Dates: 07/01/19 – 06/30/21
Amount: 100% of Remaining Eligible Student Loan Debt

2017 – 2019 **Real-Time, *in vivo* Assessment of Osteocyte Calcium Signaling Initiated by Matrix Tethers**
Role: Principal Investigator, Co-PI: Alexander Robling
Agency: Indiana University Clinical and Translational Sciences Institute
Mechanism: Collaboration in Translational Research Grant
Grant #: UL1 TR001108, Dates: 09/01/17 – 08/31/19
Amount: \$75,000

2016 – 2019 **Mechanical Partitioning of mTORC2 to Direct Mesenchymal Stem Cell Fate**
Role: Principal Investigator
Agency: NIH (NIAMS)
Impact Score (A0): 20, Percentile: 6.0
Grant #: R15AR069943-01
Dates: 06/10/16 – 05/31/19 (in no-cost extension until 05/31/20)
Amount: \$462,400

2016 – 2019 **Effect of Low Magnitude Mechanical Signals on Breast Cancer Bone Metastases**
Role: Partnering Principal Investigator, Initiating PI: Theresa Guise
Agency: Department of Defense, Breast Cancer Research Program
Overall Score (1=highest merit, 5=lowest): 1.2 (A0)
Grant #: BC150678P1, Dates: 01/15/16 – 01/14/19 (in No Cost Extension)
Amount: \$1,560,000 (\$702,772 allocated to Thompson)

2019 **Effect of Gabapentin on Anabolic Responses to Mechanical Loading**
Role: Co-Principal Investigator, PI: Julia Hum
Agency: Marian University Faculty Research Development Grant
Grant #: N/A
Amount: \$5,000

2017 – 2019 **Long-Term Benefit of Exercise During Youth on Proximal Femur Strength in Women - RENEWAL**
Role: Principal Investigator
Agency: NIH (NIAMS), Loan Repayment Program
Grant #: N/A, Dates: 07/01/17 – 06/30/19
Amount: 50% of Eligible Student Loan Debt

2017 – 2018 **Matrix Regulation of Osteocytes via Auxiliary Calcium Channel Subunits**
Role: Principal Investigator, Co-PI: Rajesh Sardar

- Agency: Research Support Funds Grant – IUPUI
 Dates: 06/01/17 – 03/31/19
 Amount: \$35,000
- 2018 **Regulation of Mesenchymal Stem Cell Lineage Commitment by the Auxiliary $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit**
 Role: Co-Principal Investigator, PI: Julia Hum, Co-PI: Christian Wright
 Agency: Marian University Faculty Research Development Grant
 Grant #: N/A, Dates: 03/30/18 – 06/30/18
 Amount: \$4,500
- 2018 **Influence of the Auxiliary Subunit $\alpha_2\delta_1$ Subunit on Bone Remodeling and Metabolism**
 Role: Co-Principal Investigator, PI: Julia Hum, Co-PI: Christian Wright
 Agency: Marian University Faculty Research Development Grant
 Grant #: N/A, Dates: 03/30/18 – 06/30/18
 Amount: \$4,500
- 2018 **RNAseq Analysis of Bone from $\alpha_2\delta_1$ knockout Mice**
 Role: Co-Principal Investigator, PI: Julia Hum, Co-PI: Christian Wright
 Agency: Marian University Faculty Research Development Grant
 Grant #: N/A, Dates: 03/30/18 – 06/30/18
 Amount: \$4,000
- 2018 **RNAseq Analysis of Bone following Osteocyte-Specific Deletion of Perlecan**
 Role: Co-Principal Investigator, PI: Julia Hum, Co-PI: Christian Wright
 Agency: Marian University Faculty Research Development Grant
 Grant #: N/A, Dates: 03/30/18 – 06/30/18
 Amount: \$4,000
- 2016 – 2018 **Generation of a Novel Mouse Model for Tissue-Specific Deletion of the $\alpha_2\delta_1$ VSCC Subunit**
 Role: Principal Investigator
 Agency: Indiana University Clinical and Translational Sciences Institute
 Mechanism: Core Pilot Grant
 Grant #: UL1 TR001108, Dates: 09/01/16 – 08/31/18
 Amount: \$10,000
- 2017 **Role of the Auxiliary $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit in Skeletal Development and Mechanoregulation**
 Role: Co-Principal Investigator, PI: Julia Hum
 Agency: Marian University Faculty Research Development Grant
 Grant #: N/A, Dates: 03/30/17 – 06/30/17
 Amount: \$5,000
- 2017 **Association of Perlecan with Voltage Sensitive Calcium Channels in Osteocytes**
 Role: Co-Principal Investigator, PI: Julia Hum
 Agency: Marian University Faculty Research Development Grant
 Grant #: N/A, Dates: 03/30/17 – 06/30/17

Amount: \$5,000

2015 – 2017 **Generation of a Novel Mouse Model for Tissue-Specific Deletion of Perlecan**
 Role: Principal Investigator
 Agency: Indiana University Clinical and Translational Sciences Institute
 Mechanism: Core Pilot Grant
 Grant #: UL1 TR001108, Dates: 09/01/15 – 08/31/17
 Amount: \$10,000

2015 – 2017 **Long-Term Benefit of Exercise During Youth on Proximal Femur Strength in Women**
 Role: Principal Investigator
 Agency: NIH (NIAMS), Loan Repayment Program
 Grant #: N/A, Dates: 07/01/15 – 06/30/17
 Amount: 50% of Eligible Student Loan Debt

2013 – 2014 **Role of Mechanically Activated Src/mTORC2 Signaling on Cytoskeletal Adaptation**
 Role: Principal Investigator
 Agency: NIH (NIAMS)
 Impact Score (A0): 13, Percentile: N/A
 Grant #: 1F32AR064133-01, Dates: 01/01/13 – 08/15/14
 Amount: \$94,544

2010 – 2011 **Promotion of Doctoral Studies II Award**
 Role: Principal Investigator
 Agency: Foundation for Physical Therapy
 Grant #: N/A
 Amount: \$15,000

2009 – 2010 **Promotion of Doctoral Studies II Award**
 Role: Principal Investigator
 Agency: Foundation for Physical Therapy
 Grant #: N/A
 Amount: \$15,000

2009 – 2010 **Adopt-a-Doc Award**
 Role: Principal Investigator
 Agency: APTA Section on Geriatrics
 Grant #: N/A
 Amount: \$2,000

2005 – 2008 **Combined PT/PhD Predoctoral Training Grant**
 Role: Trainee; PI: Stuart Binder-Macleod
 Agency: NIH (NICHD)
 Grant #: 5T32HD007490-13
 Amount: \$89,967

Research Publications

Peer-Reviewed Manuscripts – Published/In Press

- *h-index*: 27, *i10-index*: 46, total citations: 3,483 (Google Scholar)
1. **Thompson WR** and Binder-Macleod SA. Association of genetic factors with selected measures of physical performance. *Phys Ther.* 2006;86(4):585-591.
 2. **Thompson WR**, Majid AS, Czymmek KJ, Ruff AL, García J, Duncan RL, Farach-Carson MC. Association of the $\alpha_2\delta_1$ subunit with $Ca_v3.2$ enhances membrane expression and regulates mechanically induced ATP release in MLO-Y4 osteocytes. *Jour Bone & Min Res.* 2011;26(9):2125-2139.
 3. **Thompson WR**, Modla S, Grindel BJ, Czymmek KJ, Wang L, Duncan RL, Farach-Carson, MC. Perlecan/*Hspg2* Deficiency Alters the Pericellular Space of the Lacuno-Canalicular System Surrounding Osteocytic Processes in Cortical Bone. *Jour Bone & Min Res.* 2011;26(3):618-629.
 - *Selected by *The Faculty of 1000*, placing the manuscript in the top 2% of published articles in biology and medicine.
 - *Highlighted in “*Study Results from University of Delaware Update Understanding of Bone Research.*” *Science Letter* 5 Apr. 2011: 4185.
 4. **Thompson WR**, Carter R, Rohe B, Duncan RL, Cooper CR. A novel massage therapy technique for management of chronic cervical pain: a case series. *Int J Therapeutic Massage and Bodywork.* 2011;4(3):1-7.
 5. Boggs ME, **Thompson WR**, Farach-Carson MC, Duncan RL, Beebe TP. Co-culture of osteocytes and neurons on a unique patterned surface. *Biointerfaces.* 2011;6(4):200-209.
 6. McCoy SY, Falgowski KA, Srinivasan PP, **Thompson WR**, Selva EM, Kirn-Safran CB. Serum xylosyltransferase 1 level increases during early posttraumatic osteoarthritis in mice with high bone forming potential. *Bone.* 2012;51(2):224-231.
 7. Styner M, Meyer MB, Galior K, Case N, Xie Z, Sen B, **Thompson WR**, Pike JW, Rubin J. Mechanical strain downregulates C/EBP β in MSC and decreases endoplasmic reticulum stress. *PLoS ONE.* 2012; 7(12):e51613.
 8. **Thompson WR**, Rubin CT, Rubin J. Mechanical regulation of signaling pathways in bone. *Gene.* 2012;503(2):179-193.
 9. Keller BV, Davis ML, **Thompson WR**, Dahnert LE, Weinhold PS. Varying whole body vibration amplitude differentially affects tendon and ligament structural and material properties. *J Biomech.* 2013;46(9):1496-1500.
 10. **Thompson WR**, Guilluy C, Xie Z, Sen B, Brobst KE, Yen S, Uzer G, Styner M, Case N, Burrige K, Rubin J. Mechanically Activated Fyn Utilizes mTORC2 to Regulate RhoA and Adipogenesis in Mesenchymal Stem Cells. *Stem Cells.* 2013;31(11):2528-2537.
 11. Sen B, Xie Z, Case N, **Thompson WR**, Uzer G, Styner M, Rubin J. mTORC2 regulates mechanically induced cytoskeletal reorganization and lineage selection in marrow derived mesenchymal stem cells. *Jour Bone and Min Res.* 2014;29(1):78-89.
 - *Highlighted in “*Mesenchymal Cell News*”, 5.26 July 9, 2013

12. Uzer G, Pongkitwitoon S, Ian C, **Thompson WR**, Rubin J, Chan ME, Judex S. Gap junctional communication in osteocytes is amplified by low intensity vibrations in vitro. *PLoS ONE*. 2014; 9(3):e90840.
13. Wang B, Lai X, Price C, **Thompson WR**, Li W, Quabili TR, Tseng WJ, Liu XS, Zhang H, Pan J, Kirn-Safran CB, Farach-Carson MC, Wang L. The perlecan-containing pericellular matrix regulates solute transport and mechanosensing within the osteocyte lacunar-canalicular system. *Jour Bone and Min Res*. 2014;29(4):878-891.
14. Styner M, **Thompson WR**, Galior K, Uzer G, Wu X, Kadari S, Case N, Xie Zhihui, Sen B, Romaine A, Pagnotti GM, Rubin CT, Styner M, Horowitz M, Rubin J. Bone marrow fat accumulation accelerated by high fat diet is suppressed by exercise. *Bone*. 2014;64:39-46.
15. **Thompson WR**, Yen S, Rubin J. Vibration Therapy: Clinical Applications in Bone. *Curr Opin in Endocrinol Diabetes Obes*. 2014;21(6):447-53.
*Highlighted in the New York Times, Aug 10, 2017. <https://www.nytimes.com/2017/08/10/well/live/chair-yoga-for-my-funny-bones.html>
16. Lai X, Price C, Modla S, **Thompson WR**, Caplan J, Kirn-Safran CB, Wang L. The Dependences of Osteocyte Network on Bone Compartment, Age, and Disease. *Bone Res*. 2015;3:15009.
17. Rohe B, Carter R, **Thompson WR**, Duncan RL, Cooper CR. Experimental integrative muscular movement technique enhances cervical range of motion in patients with chronic neck pain: pilot study. *Jour Altern and Compl Med*. 2015;21(4):223-28.
18. **Thompson WR**, Keller BV, Davis ML, Dahners LE, Weinhold PS. Low-Magnitude, High-Frequency Vibration Fails to Accelerate Ligament Healing but Stimulates Collagen Synthesis in the Achilles Tendon. *Orth Jour Sport Med*. 2015;3(5):2325967115585783.
19. Uzer G, **Thompson WR**, Case N, Xie Z, Sen B, Yen S, Styner M, Rubin C, Judex S, Burridge K, Rubin J. Cell Mechanosensitivity to Extremely Low Magnitude Signals is Enabled by a LINCed nucleus. *Stem Cells*. 2015;33(6):2063-76.
20. Styner M, Pagnotti GM, Gailor K, Wu X, **Thompson WR**, Uzer G, Sen B, Xie Z, Horowitz MC, Styner MA, Rubin C, Rubin J. Exercise regulation of marrow fat in the setting of PPAR γ agonist treatment in female C57BL/6 mice. *Endocrinology*. 2015;156(8):2753-61.
21. **Thompson WR**, Uzer G, Brobst KE, Yen S, Xie Z, Sen B, Styner M, Rubin J. Osteocyte Specific Responses to Soluble and Mechanical Stimuli in a Stem Cell Derived Culture Model. *Scientific Reports*. 2015;5:11049.
22. Sen B, Xie Z, Uzer G, **Thompson WR**, Styner M, Wu X, Rubin J. Intranuclear Actin Regulates Osteogenesis. *Stem Cells*. 2015;33(10):3065-76.
23. **Thompson WR**, Scott A, Loghmani MT, Ward SR, Warden SJ. Understanding Mechanobiology: Physical Therapists as a Force in Mechanotherapy and Musculoskeletal Regenerative Rehabilitation. *Phys Ther*. 2016;96(4):560-9.
*Selected by *The Faculty of 1000*, placing manuscript in the top 2% of publications in biology & medicine.
24. Uzer G, Fuchs RK, Rubin J, **Thompson WR**. Plasma and Nuclear Membranes Convey Mechanical Information to Regulate Mesenchymal Stem Cell Lineage. *Stem Cells*. 2016;34(6):1455-63.

25. Fuchs RK, Kersh ME, Carballido-Gamio J, **Thompson WR**, Keyak JH, Warden SJ. Physical Activity for Strengthening Fracture Prone Regions of the Proximal Femur. *Curr Osteopor Rep.* 2017;15(1):43-52.
26. Warden SJ, **Thompson WR**. Becoming One with the Force: Optimizing Mechanotherapy through an Understanding of Mechanobiology. *Brit J Sports Med.* 2017;51(13):989-990.
27. Warden SJ, Fletcher JM, Barker RG, Guildenbecher EA, Gorkis CE, **Thompson WR**. Progress in the Full-Text Publication Rate of Orthopaedic and Sport Physical Therapy Abstracts Presented at the American Physical Therapy Association's Combined Sections Meeting. *Jour Ortho Sport Phys Ther.* 2017;7:1-18.
28. Warden SJ, Weatherholt AM, Gudeman AS, Mitchell DC, **Thompson WR**, Fuchs RK. Progressive Skeletal Benefits of Physical Activity when Young as Assessed at the Midshaft Humerus in Male Baseball Players. *Osteopor Int.* 2017;28(7):2155-2165.
29. **Thompson WR**, Yen S, Uzer G, Xie Z, Sen B, Styner M, Burr ridge K, Rubin J. LARG GEF and ARHGAP18 orchestrate RhoA activity to control mesenchymal stem cell lineage. *Bone.* 2018;107:172-180.
30. Williams JN, Kambrath AV, Patel RB, Mével E, Li Y, Chen YH, Kang KS, Hassert MA, Voor MJ, Kacena MA, **Thompson WR**, Warden SJ, Burr DD, Robling AG, Allen MR, Sankar U. Inhibition of CaMKK2 Enhances Fracture Healing by Stimulating Indian Hedgehog Expression and Accelerating Endochondral Ossification. *Jour Bone and Min Res.* 2018;33(5):930-944.
31. Fuchs RK, **Thompson WR**, Weatherholt AM, Warden SJ. Baseball and Softball Pitchers are Distinct within-Subject Controlled Models for Exploring Proximal Femur Adaptation to Physical Activity. *Calf Tiss Int.* 2019;104(4):373-381.
32. Gurumurthy C, O'Brien AR, Quadros RM, Adams JJ, Alcaide P, Ayabe S, Ballard J, Batra SK, Beauchamp MC, Becker KA, Bernas G, Brough D, Carillo-Salinas F, Chan W, Chen H, Dawson R, DeMambro V, D'Hont J, Dibb K, Eudy JD, Gan L, Gao J, Gonzales A, Guntur A, Guo H, Harms DW, Harrington A, Hentges KE, Humphreys N, Tino Hochepped¹³, Imai S, Ishii H, Iwama M, Jonasch E, Karolak M, Keavney B, Khin NC, Konno M, Kotani Y, Kunhiro Y, Lakshmanan I, Larochele C, Lawrence CB, Li L, Lindner V, Liu XD, Lopez-Castejon G, Loudon A, Lowe J, Jerome-Majeweska LA, Matsusaka T, Miura H, Miyasaka Y, Morpurgo B, Motyl K, Nabeshima Y, Nakade K, Nakashiba T, Nakashima K, Obata Y, Ogiwara S, Ouellet M, Oxburgh L, Piltz S, Pinz I, Ponnusamy MP, Ray D, Redder RJ, Rosen CJ, Ross N, Ruhe MT, Ryzhova L, Salvador AM, Alam SS, Sedlacek R, Sharma K, Smith C, Staes K, Starrs L, Sugiyama F, Takahashi S, Tanaka T, Trafford A, Uno Y, Vanhoutte L, Vanrockeghem F, Willis BJ, Wright CS, Yamauchi Y, Yi X, Yoshimi K, Zhang, Zhang X, Ohtsuka M, Das S, Garry DJ, Hochepped T, Thomas P, Parker-Thornburg J, Adamson AD, Yoshiki A, Schmouth JF, Golovko A, **Thompson WR**, Lloyd KC, Wood JA, Cowan M, Mashimo T, Mizuno S, Zhu H, Kaspavec P, Liaw L, Miano JM, and Burgio G. Reproducibility of CRISPR-Cas9 Methods for Generation of Conditional Mouse Alleles: a Multi-Center Evaluation. *Genome Biology.* 2019;20(171):1-14.
33. Lewis KJ, Yi X, Wright CS, Pemberton EZ, Bullock WA, **Thompson WR**, Robling AG. The mTORC2 Component Rictor is Required for Load-Induced Bone Formation in Late-Stage Skeletal Cells. *JBMR Plus.* 2020;4(7):e10366.

34. Anloague A, Mahoney A, Ogunbekun O, **Thompson WR**, Larsen B, Hum JM, Lowery JW. *Mechanical Stimulation of Human Dermal Fibroblasts Regulates Pro-Inflammatory Cytokines: Potential Insight into Soft Tissue Manual Therapies. BMC Research Notes. 2020;13(1):400.*
35. Yi X, Wright LE, Pagnotti GM, Uzer G, Sankar U, Mohammad K, Rubin CT, Guise TA, **Thompson WR**. Mechanical Suppression of Breast Cancer Cell Invasion and Paracrine Signaling to Osteoclasts Requires Nucleo-Cytoskeletal Connectivity. *Bone Research. 2020; 8(1):40.* *Selected as the 2020 Indiana Center for Musculoskeletal Health “Paper of the Year”
36. Tippen SP, Noonan ML, Ni P, Metzger CE, Swallow EA, Sacks SA, Chen NX, **Thompson WR**, Prideaux M, Atkins GJ, Moe SM, Allen MR, White KE. Age and Sex Effects on FGF23-Mediated Response to Mild Phosphate Challenge. *Bone. 2021; 146:115885.*
37. Noonan ML, Ni P, Agoro R, Sacks SA, Swallow EA, Allen MR, Clinkenbeard EL, Wheeler JA, **Thompson WR**, White KE. The HIF-PHI BAY85-3934 (Molidustat) improves anemia and is associated with reduced levels of circulating FGF23 in a CKD mouse model. *Journal of Bone and Mineral Research. 2021; 36(6):1117-1130.*
38. Wright CS, Robling AG, Farach-Carson MC, **Thompson WR**. Skeletal Functions of Voltage Sensitive Calcium Channels. *Current Osteoporosis Reports. 2021; 19(2):206-221.*
39. Gurusurthy C, O’Brien AR, Quadros RM, Adams JJ, Alcaide P, Ayabe S, Ballard J, Batra SK, Beauchamp MC, Becker KA, Bernas G, Brough D, Carillo-Salinas F, Chan W, Chen H, Dawson R, DeMambro V, D’Hont J, Dibb K, Eudy JD, Gan L, Gao J, Gonzales A, Guntur A, Guo H, Harms DW, Harrington A, Hentges KE, Humphreys N, Tino Hochepped¹³, Imai S, Ishii H, Iwama M, Jonasch E, Karolak M, Keavney B, Khin NC, Konno M, Kotani Y, Kunhiro Y, Lakshmanan I, Larochele C, Lawrence CB, Li L, Lindner V, Liu XD, Lopez-Castejon G, Loudon A, Lowe J, Jerome-Majeweska LA, Matsusaka T, Miura H, Miyasaka Y, Morpurgo B, Motyl K, Nabeshima Y, Nakade K, Nakashiba T, Nakashima K, Obata Y, Ogiwara S, Ouellet M, Oxburgh L, Piltz S, Pinz I, Ponnusamy MP, Ray D, Redder RJ, Rosen CJ, Ross N, Ruhe MT, Ryzhova L, Salvador AM, Alam SS, Sedlacek R, Sharma K, Smith C, Staes K, Starrs L, Sugiyama F, Takahashi S, Tanaka T, Trafford A, Uno Y, Vanhoutte L, Vanrockeghem F, Willis BJ, Wright CS, Yamauchi Y, Yi X, Yoshimi K, Zhang²⁰, Zhang X, Ohtsuka M, Das S, Garry DJ, Hochepped T, Thomas P, Parker-Thornburg J, Adamson AD, Yoshiki A, Schmouth JF, Golovko A, **Thompson WR**, Lloyd KC, Wood JA, Cowan M, Mashimo T, Mizuno S, Zhu H, Kaspavec P, Liaw L, Miano JM, and Burgio G. Response to Correspondence on “Reproducibility of CRISPR-Cas9 Methods for Generation of Conditional Mouse Alleles: a Multi-Center Evaluation. *Genome Biology. 2021;22(1):99.*
40. Pagnotti GM, **Thompson WR**, Rubin CT, Guise TA. Suppression of Cancer-Associated Bone Loss Through Dynamic Mechanical Loading. *Bone. 2021;150:115998.*
41. Edwards DF, Quintana-Martinez A, Lally J, Wright CS, **Thompson WR**, Clinkenbeard EL. Differential Iron Requirements for Osteoblast and Adipocyte Differentiation. *JBMR Plus. 2021;5(9):e10529.*
42. Prideaux M, Wright CS, Noonan ML, Yi X, Clinkenbeard EL, Mével E, Wheeler JA, Byers S, Wijenayaka AR, Gronthos S, Sankar U, White KE, Atkins GJ, **Thompson WR**. Generation of two Multipotent Mesenchymal Progenitor Cell Lines Capable of Osteogenic, Mature Osteocyte, Adipogenic, and Chondrogenic Differentiation. *Scientific Reports. 2021;11(1):22593.*

43. Mével E, Shutter JA, Ding X, Mattingly BT, Williams JN, Li Y, Huls A, Kambrath AV, Trippel SB, Wagner DR, Allen AR, O’Keefe R, **Thompson WR**, Burr DB, Sankar U. Systemic Inhibition or Global Deletion of CaMKK2 Protects Against Post-Traumatic Osteoarthritis. *Osteoarthritis and Cartilage*. 2022;30(1):124-136.
44. Wright CS, Hill ER, Reyes Fernandez PC, **Thompson WR**, Gallant MA, Campbell WW, Main RP. Effects of Dietary Protein Source and Quantity on Bone Morphology and Body Composition Following a High-Protein Weight-Loss Diet in a Rat Model for Postmenopausal Obesity. *Nutrients*. 2022; *In Press*. [IF: 5.719]
45. Reyes Fernandez PC, Wright CS, Warden SJ, Hum J, Farach-Carson MC, **Thompson WR**. Effects of Gabapentin and Pregabalin on Calcium Homeostasis: Implications for Physical Rehabilitation of Musculoskeletal Tissues. *Current Osteoporosis Reports*. 2022;20(6):365-378. [IF: 5.163]
46. Ballinger TJ, **Thompson WR**, Guise TA. The Bone-Muscle Connection in Breast Cancer: Implications and Therapeutic Strategies to Preserve Musculoskeletal Health. *Breast Cancer Research* 2022; 24(1):84. [IF: 8.408]
47. Reyes Fernandez PC, Wright CS, Masterson AN, Yi X, Tellman TV, Bonteanu A, Rust K, Noonan ML, White KE, Lewis KJ, Sankar U, Hum J, Bix G, Wu D, Robling AG, Sardar R, Farach-Carson MC, **Thompson WR**. Gabapentin Disrupts Binding of Perlecan to the $\alpha_2\delta_1$ Voltage Sensitive Calcium Subunit and Impairs Skeletal Mechanosensation. *Biomolecules*. 2022. *In Press*. [IF: 6.208]
Preprint: <https://www.biorxiv.org/content/10.1101/2022.07.20.500827v1>
48. Noonan ML, Ni P, Solis E, Marambio YG, Agoro R, Chu X, Wang Y, Gao H, Xuei X, Clinkenbeard EL, Jiang G, Liu S, Stegen S, Carmeliet G, **Thompson WR**, Liu Y, Wan J, White KE. Osteocyte Egn1/Phd2 Links Oxygen Sensing and Biomineralization via FGF23. *Bone Research*. *In Press*. [IF: 13.362]
49. William JN, Irwin M, Li Y, Kambrath AV, Mattingly BT, Patel S, Kittaka M, Clough NA, Mukherjee N, Doud EH, Mosley AL, Bellido T, Bruzzaniti, A, Plotkin LI, Trinidad JC, **Thompson WR**, Bonewald LF, Sankar U. Osteocyte-Derived CaMKK2 Regulates Osteoclasts and Bone Mass in a Sex-Dependent Manner Through Secreted Calpastatin. *Int Jour Mol Sci*. 2023;24(5):4718. [IF: 6.208]
50. Agoro R, Nookaew I, Noonan ML, Marambio YG, Liu S, Chang W, Gao H, Hibbard LM, Metzger CE, Horan D, **Thompson WR**, Xuei X, Liu Y, Zhang C, Robling AG, Bonewald LF, Wan J, White KE. Single Cell Cortical Bone Transcriptomics Defines Novel Osteolineage Gene Sets Altered in Chronic Kidney Disease. *Front Endocrinol (Lausanne)*. 2023;14:1063083. [IF: 6.055]
51. Reyes Fernandez PC, Wright CS, Farach-Carson MC, **Thompson WR**. Examining Mechanisms for Voltage Sensitive Calcium Channel-Mediated Secretion Events in Bone Cells. *Calcif Tissue Int*. 2023;113(1):126-142. [IF: 4.2]
52. Singh H, Moore BA, Rathore R, Reed WR, **Thompson WR**, Fisher G, Lein DH, Hunter GR. Skeletal Effects of Eccentric Strengthening Exercise: A Scoping Review. *BMC Musculoskel Disord*. 2023;24(1):611. [2.562]
53. Kelly MM, Sharma K, Wright CS, Yi X, Gegg AT, Gorrell TA, Noonan ML, Baghdady A, Sieger JA, Dolphin AC, Warden SJ, Deosthale P, Plotkin LI, Sankar U, Hum JM, Robling

AG, Farach-Carson MC, **Thompson WR**. Loss of the Auxiliary $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit Impairs Bone Formation and Anabolic Responses to Mechanical Loading. *JBMR Plus*. In Press. [IF: 3.8]

54. Wright CS, Lewis KJ, Semon KS, Yi X, Reyes Fernandez, PC, Rust K, Prideaux M, Schneider A, Pederson M, Deosthale P, Plotkin L, Hum JM, Sankar U, Farach-Carson MC, Robling AG, **Thompson WR**. Deletion of the auxiliary $\alpha_2\delta_1$ voltage sensitive calcium channel subunit in osteocytes and late-stage osteoblasts impairs femur strength and load-induced bone formation in male mice. *Journal of Bone and Mineral Research*. In Press. [IF: 6.443]
55. Xiong X, Huo Q, Li K, Cui C, Chang C, Park C, Ku B, Hong C, Lim H, Pandya PH, Saadatzaheh MR, Bijangi-Vishehsaraei K, Lin C, Kacena MA, Pollok K, Chen A, Liu J, **Thompson WR**, Li X, Li B, Yokota H. Enhancing Anti-Tumor Potential: Low-Intensity Vibration Suppresses Osteosarcoma Progression and Augments MSCs' Tumor-Suppressive Abilities. *Theranostics*. 2024;14(4):1430-1449. [IF: 12.4]
56. Birks S, Howard S, O'Rourke C, **Thompson WR**, Lau A, Uzer G. Osterix-driven LINC complex disruption *in vivo* diminishes osteogenesis at 8 weeks but not at 15 weeks. *J Orthop Res*. 2024; 42(9):2007-2016. [IF: 2.8]
57. Mattingly BT, Kambrath AV, Ding X, **Thompson WR**, Sankar U. Conditional Loss of CaMKK2 in Osterix-Positive Osteoprogenitors Enhances Trabecular and Cortical Bone Mass. *Bone*. 2024; 3:184:117113. [IF: 4.1]
58. Birks S, Howard S, Wright CS, O'Rourke C, Day EA, Lamb AJ, Walsdorf JR, Lau A, **Thompson WR**, Uzer G. Prrx1-driven LINC complex disruption *in vivo* reduces osteoid deposition but not bone quality after voluntary wheel running. *Accepted*. Preprint: <https://www.biorxiv.org/content/10.1101/2023.08.24.554623v1>

Peer-Reviewed Manuscripts – Under Review

59. ***Thompson WR**, *Kronbergs A, Shao Y, Farach-Carson MC, Duncan RL. Knockout of T-type $Ca_v3.2$ (α_{1H}) Voltage Sensitive Calcium Channel Reduces Bone Density and Alters Mechanical Properties in the Long Bones of Mice. *Submitted to Journal of Bone and Mineral Research* [IF: 6.741]
*Authors provided equal contribution.
60. Pagnotti GM, Trivedi T, Wright LE, John SK, Murthy S, Pattyn RR, Willis MS, She Y, Suresh S, **Thompson WR**, Rubin CT, Mohammad KS, Guise TA. Low Magnitude Mechanical Signals Combined with Zoledronic Acid Reduce Musculoskeletal Weakness and Adiposity in Estrogen-Deprived Mice.
Preprint: <https://www.biorxiv.org/content/10.1101/2023.03.12.531571v1>
61. Xiong X, Huo Q, Li K, Cui C, Chang C, Park C, Ku B, Hong C, Lim H, Pandya PH, Saadatzaheh MR, Bijangi-Vishehsaraei K, Lin C, Kacena MA, Pollok K, Chen A, Liu J, **Thompson WR**, Li X, Li B, Yokota H. Enhancing Anti-Tumor Potential: Low-Intensity Vibration Suppresses Osteosarcoma Progression and Augments MSCs' Tumor-Suppressive Abilities. *Submitted to Nature Biomedical Engineering* [IF: 29.234]

Peer-Reviewed Manuscripts – In Preparation

62. Yi X, Pagnotti GM, Uzer G, Sankar U, Rubin CT, Guise TA, **Thompson WR**. Low Magnitude Mechanical Forces Suppress Catabolic Signaling to Osteoclasts by Impairing Release of Extracellular Vesicles from Breast Cancer Cells.

Peer-Reviewed Book Chapters/Monographs

1. **Thompson WR** and Farach-Carson MC. Effects of 1,25-Dihydroxyvitamin D₃ on Voltage-Sensitive Calcium Channels in Osteoblast Differentiation and Morphology. Vitamin D, Third Edition-2 volume set. (Feldman D, Glorieux F, & Pike W, eds) *Elsevier*. San Diego, CA, 2011.
2. **Thompson WR**, Gottardi R, Stearns KM, Ambrosio F, Rubin J, Tuan R. Bone and Cartilage Biologics. In: Hughes C, ed. Applications of Regenerative Medicine to Orthopaedic Physical Therapy. La Crosse, WI: Orthopaedic Section APTA; 2014.
3. Fuchs RK, **Thompson WR**, Warden SJ. Bone Anatomy, Physiology, and Adaptation to Mechanical Loading. In: Pawelec KM, Planell JA, editors. Bone Repair and Biomaterials, 2nd Edition. Cambridge, England: Woodhead Publishing Ltd; 2019. P. 15-52.
4. Goelzer M, **Thompson WR**, Uzer G. Cells as Functional Load Sensors and Drivers of Adaptation. In: Niebur GL, ed. Mechanobiology: From Molecular Sensing to Disease, 1st Edition. Philadelphia, USA: Elsevier Publishing; 2019. P. 79-98.

Research Presentations (All are peer-reviewed at professional conferences)

Platform Presentations (Mentor or co-mentor of @underGrad, *Grad/Med Student, or #Postdoc)

1. Shutter JA, Ding X, Mevel E, Williams JN, Mattingly BT, Trippel SB, Wagner D, **Thompson WR**, Burr DB, Sankar U, CaMKK2 Inhibition or Deletion Suppresses IL-6-Stat3 Activation and Protects Against Osteoarthritis. *Annual Meeting of the Orthopedic Research Society*. Tampa, FL, 2022.
2. Williams JN, Irwin M, Mukherjee N, Kambrath AV, Clough N, Warrick A, Kittaka M, Ueki Y, Bellido T, Doud E, Mosley A, Plotkin L, **Thompson WR**, Bonewald L, Sankar U. Conditional Deletion of CaMKK2 from Osteocytes Enhances Secretion of Calpastatin to Modulate Osteoclasts and Regulate Bone Remodeling in a Sex-Dependent Manner. *Annual Meeting of the Orthopedic Research Society*. Tampa, FL, 2022.
3. Yi X, Sims E, Zu J, Pagnotti GM, Uzer G, Rubin CT, Sankar U, Guise TA, **Thompson WR**. Low Magnitude Mechanical Forces Suppress Release of Extracellular Vesicles from Breast Cancer Cells to Regulate Osteoclasts Formation. *ASBMR 43rd Annual Meeting*, San Diego, CA 2021.
4. Wright CS[#], Yi X, Semon KS^{*}, Schneider A^{*}, Pederson M[@], Farach-Carson MC, Robling AG, **Thompson WR**. Osteocyte-specific deletion of the auxiliary $\alpha_2\delta_1$ voltage sensitive calcium channel subunit impairs femur strength and load-induced bone formation. *ASBMR-Advances in Mineral Metabolism Meeting*. Snow Mass, CO, 2021.

***Charles Turner Award awarded to Christian Wright*

5. Wright CS[#], Semon KS^{*}, Schneider A^{*}, Pederson M[@], Yi X, Hum JM, Farach-Carson MC, Robling AG, **Thompson WR**. Osteocyte-specific deletion of the auxiliary $\alpha_2\delta_1$ voltage sensitive calcium channel subunit impairs femur strength and load-induced bone formation. *Indiana University Postdoctoral Symposium*. Indianapolis, IN, 2020.
6. Semon KS^{*}, Wright CS[#], Farach-Carson MC, Hum JM, Robling AG, **Thompson WR**. The voltage sensitive calcium channel auxiliary subunit $\alpha_2\delta_1$ regulates lineage fate of mesenchymal progenitor cells. *Indiana Physiological Society 10th Annual Meeting*. Indianapolis, IN, 2020.
7. Wright CS[#], Yi X, Semon KS^{*}, Schneider A^{*}, Pederson M[@], Farach-Carson MC, Robling AG, **Thompson WR**. Osteocyte-specific deletion of the auxiliary $\alpha_2\delta_1$ voltage sensitive calcium channel subunit impairs femur strength and load-induced bone formation. *Annual Meeting of the Orthopedic Research Society*. Phoenix, AZ, 2020.
8. Wright CS[#], Yi X, Schneider A^{*}, Pederson M[@], Farach-Carson MC, Robling AG, **Thompson WR**. Osteocyte-Specific Deletion of the Auxiliary $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit Impairs Skeletal Strength and Decreases both Lean and Fat Masses. *International Meeting of Bone and Muscle Interactions: The Mechanical and Beyond*. Indianapolis, IN, 2019.
9. Pagnotti GM[#], Pattyn R, Wilson RE, Wright LE, Trivedi T, Murthy S, John SK, She Y, **Thompson WR**, Rubin CT, Mohammad KS, Guise TA. Mechanical Signals Suppress Bone and Muscle Loss in a Murine Model of Complete Estrogen Deprivation. *International Meeting of Bone and Muscle Interactions: The Mechanical and Beyond*. Indianapolis, IN, 2019.
10. Wright CS[#], Yi X, Schneider A^{*}, Pederson M[@], Farach-Carson MC, Robling AG, **Thompson WR**. Osteocyte-Specific Deletion of the Auxiliary $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit Impairs Skeletal Strength and Decreases both Lean and Fat Masses. *ASBMR 41st Annual Meeting*. Orlando, FL, 2019.
11. Noonan ML, Clinkenbeard EL, Ni P, Tippen SP, **Thompson WR**, Allen MR, White KE. EPO and HIF-PHDi in treating CKD-related anemia and control of circulating FGF23. *ASBMR 41st Annual Meeting*. Orlando, FL, 2019.
12. Kelly M^{*}, Sieger J^{*}, Baghdady A^{*}, Sharma K^{*}, Yi X, Wright CS[#], Robling AG, Hum JM, Farach-Carson MC, **Thompson WR**. The Auxiliary $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit is Necessary for Proper Bone Accrual and Anabolic Responses to Mechanical Loading *in vivo*. *Annual Meeting of the Orthopedic Research Society*. Austin, TX, 2019.
13. Pagnotti GM[#], Pattyn R, Wright LE, Murthy S, John S, She Y, Rubin CT, **Thompson WR**, Mohammad KS, Guise TA. Mechanical Signals Preserve Bone and Muscle While Suppressing Adiposity in a Murine Model of Complete Estrogen Deprivation. *ASBMR 40th Annual Meeting*. Montreal, Canada, 2018.
14. **Thompson WR**. Mechanical Control of MSC Fate: The Role of the Actin Cytoskeleton. *6th Annual Symposium on Regenerative Rehabilitation*. Pittsburgh, PA, 2017.
15. Sharma K^{*}, Kelly M^{*}, Noonan M, Yi X, Robling AG, Hum JM Farach-Carson MC, **Thompson WR**. Mice Lacking the $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit have Impaired Bone Quantity and Decreased Lean Mass. *Marian University Research Day*, Indianapolis, IN, 2017.

16. **Thompson WR.** Mechanical Regulation of MSC Differentiation through mTORC2/Cytoskeletal Signaling. *ASBMR-Advances in Mineral Metabolism Meeting*. Snow Mass, CO, 2017.
17. Uzer G, Bas G, Sen B, Xie Z, **Thompson WR**, Styner M, Rubin J. Nuclear Envelope Mechanosome Regulates β -Catenin Nuclear Transport. *45th International Orthopaedic Research Society Sun Valley Workshop on Musculoskeletal Biology*. Sun Valley, ID, 2015
18. **Thompson WR**, Uzer G, Yen S, Sen B, Xie Z, Styner M, Rubin J. A Novel Osteocyte Model that Recapitulates *in vivo* Mechanical and Hormonal Responses. *APTA CSM*. Indianapolis, IN, 2015.
19. **Thompson WR.** Sclerostin is Mechanically and Hormonally Regulated in a Novel *in vitro* Osteocyte Model. *12th International Bone Fluid Flow Workshop*. Houston, TX, 2014.
20. Uzer G, Pongkitwitoon S, **Thompson WR**, Rubin C, Rubin J, Judex S. Is fluid shear driving bone's cellular response to high frequency mechanical signals? *12th International Bone Fluid Flow Workshop*. Houston, TX, 2014.
21. Uzer G, **Thompson WR**, Sen B, Xie Z, Sen S, Bas G, Styner M, Rubin CT, Rubin J. The nuclear envelope mechanosome regulates mechanical activation of β catenin and its nuclear transport. *ASBMR 36th Annual Meeting*. Houston, TX, 2014.
22. Styner M, Wu X, **Thompson WR**, Uzer G, Xie Z, Sen B, Romaine A, Pagnotti GM, Rubin CT, Styner MA, Horowitz MC, Rubin J. Exercise regulation of marrow fat in the setting of PPAR γ agonist treatment. *ASBMR 36th Annual Meeting*. Houston, TX, 2014.
23. Yen S, **Thompson WR**, Uzer G, Xie Z, Sen B, Case N, Styner M, Burrridge K, Rubin J. Regulation of RhoA through the GTPase Activating Protein ARHGAP18 is Critical for Mesenchymal Stem Cell Lineage Commitment. *96th Annual Endocrine Society Meeting*. Chicago, IL, 2014.
24. **Thompson WR**, Modla S, Grindel BJ, Czymmek KJ, Kirn-Safran CB, Wang L, Duncan RL, Farach-Carson MC. Perlecan/HSPG2 Helps Maintain the Pericellular Space of the Lacuno-Canalicular System Surrounding Osteocytic Processes in Murine Cortical Bone. *11th International Bone Fluid Flow Conference*. Toronto, ON, Canada, 2010.
25. **Thompson WR.** Perlecan/HSPG2 Deficiency Alters the Pericellular Space of the Lacuno-Canalicular Network Surrounding Osteocytic Processes in Cortical Bone. *7th Annual Center for Biomedical Engineering Research Symposium*, Newark, DE, 2010.
26. **Thompson WR.** T-Type Voltage Sensitive Calcium Channels: A Regulatory Role in Osteocyte Mechanotransduction? *10th International Bone Fluid Flow Conference*, Hershey, PA, 2009.
27. **Thompson WR**, Chesley AT, Crow MT. Exploring novel protein interactions involving ARC in a yeast-two-hybrid system. *Tennessee Academy of Science Regional Meeting*, Knoxville, TN, 2003.

*Poster Presentations (Mentor or co-mentor of *Graduate Student, #Postdoc, @DPT student)*

28. Xiong X, Huo Q, Li K, Cui C, Lim H, **Thompson WR**, Li B, Yokota H. Low-Intensity Vibration (LIV) Enhances the Anti-Tumor Capability of MSCs. *Annual Meeting of the Orthopedic Research Society*, Long Beach, CA, 2024.
29. Yi X, Sims E, Zu J, Pagnotti GM, Uzer G, Rubin CT, Sankar U, Guise TA, **Thompson WR**. Low Magnitude Mechanical Forces Suppress Release of Extracellular Vesicles from Breast Cancer Cells to Regulate Osteoclasts Formation. *ASBMR 43rd Annual Meeting*, San Diego, CA 2021. ***Selected as a plenary poster**
30. Pagnotti GM, Bacha DS, Kuo T, Trivedi T, Murthy S, Suresh S, Rubin CT, **Thompson WR**, Mohammad KS, Guise TA. Low Intensity Vibrations Combined with Zoledronic Acid Reduce Osteolytic Lesion Area from Breast Cancer Bone Metastases. *ASBMR 43rd Annual Meeting*, San Diego, CA 2021.
31. Wright CS[#], Semon KM^{*}, Kelly M^{*}, Yi X, Pagnotti GM, Hum JM, Robling AG, Farach-Carson MC, **Thompson WR**. Deletion of the Auxiliary $\alpha_2\delta_1$ Voltage-Sensitive Calcium Channel Subunit Increases Bone Marrow Fat Adiposity in Mice. *ASBMR 43rd Annual Meeting*, San Diego, CA 2021. ***Received Young Investigator Travel Award**
32. Bhadouria N, Kittaka M, **Thompson WR**, Ueki Y, Holquin N. Global Deletion of SerpinA1a-e Induces Bone Loss by Promoting Osteoclasts and Impairing Osteoblasts. *ASBMR 43rd Annual Meeting*, San Diego, CA 2021.
33. Lewis KJ, Rust K, Wright CS[#], Coulombe JC, Robling AG, Farach-Carson MC, **Thompson WR**. Load Induced Calcium Signaling in Osteocytes *in vivo* is Altered by Deletion of the Auxiliary $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit. *ASBMR 43rd Annual Meeting*, San Diego, CA 2021.
34. Agoro R, Noonan ML, Gao H, Marambio YG, **Thompson WR**, Xuei X, Liu Y, Robling AG, Bonewad LF, White KE. Osteocyte scRNAseq Reveals Heterogeneous Differentiation Status and an Initial Framework for Chronic Disease Pathology. *ASBMR 43rd Annual Meeting*, San Diego, CA 2021.
35. Noonan M, Agoro R, Ni P, Solis E, Liu S, Chu X, Wang Y, Clinkenbeard E, Gao H, Xuei X, **Thompson WR**, Wan J, Liu Y, White KE. Osteocytes are Functionally Poised for Oxygen Sensing via Specific Genomic and Transcriptional Adaptations to Control Biomineralization through the Regulated Production of FGF23. *ASBMR 43rd Annual Meeting*, San Diego, CA 2021.
36. Reyes Fernandez P[#], Wright CS[#], Yi X, Hum J, Farach-Carson MC, **Thompson WR**. Loss of the $\alpha_2\delta_1$ Auxiliary Subunit of Voltage Sensitive Calcium Channels Impairs Bone Quality and Quantity by Regulating Paracrine Signaling to Osteoclasts. *ASBMR 43rd Annual Meeting*, San Diego, CA 2021. ***Received Young Investigator Travel Award**
37. Clinkenbeard EL, Edwards DF, Wright CS, **Thompson WR**. Differential Iron Requirements of Osteoblast and Adipocyte Differentiation. *ASBMR 42nd Annual Meeting*, Seattle, WA 2020.
38. Pagnotti GM[#], Willis MS, Trivedi T, Murthy S, Suresh S, She Y, Rubin CT, **Thompson WR**, Mohammad KS, Guise TA. Low Magnitude Mechanical Signals Enhance the Effects of Zoledronic to Reduce Osteolytic Lesion Area and Improve Cardiac Function in a Murine Model of Breast Cancer Bone Metastases. *ASBMR 42ⁿ Annual Meeting*, Seattle, WA 2020.

39. Semon KS, Wright CS[#], Farach-Carson MC, Robling AG, **Thompson WR**. The Voltage-Sensitive Calcium Channel Auxiliary Subunit $\alpha_2\delta_1$ Influences the Osteogenic and Adipogenic Potential of Mesenchymal Progenitor Cells. *Annual Meeting of the Orthopedic Research Society*, Phoenix, AZ, 2020.
40. Wright CS[#], Yi X, Schneider A, Pederson M, Farach-Carson MC, Robling AG, **Thompson WR**. Osteocyte-specific deletion of the auxiliary $\alpha_2\delta_1$ voltage sensitive calcium channel subunit impairs skeletal strength and decreases both lean and fat masses. *ASBMR Symposium, Muscle: The Path Forward to New Therapeutic Targets*, Orlando, FL 2019.
41. Daniel AL, Ferrari A, Nelson JH, McAndrews K, Cregor M, Ghazzawi Z, **Thompson WR**, Evans-Molina C, Bellido T, Delgado-Calle J. Bone-Derived Sclerostin has Endocrine Actions in Adipocyte Precursors and Pancreatic Beta-Cells. *ASBMR 41st Annual Meeting*, Orlando, FL 2019.
42. Pagnotti GM[#], John SK, Trivedi T, She Y, Wright LE, Murthy S, Suresh S, Rubin CT, **Thompson WR**, Mohammad KS, Guise TA. Low intensity vibration enhances the effects of zoledronic acid on bone mass and strength. *ASBMR 41st Annual Meeting*, Orlando, FL 2019.
43. Wu D, **Thompson WR**, Farach-Carson MC. Morphological and Molecular Equivalence of Osteocytes in Biomimetic Hydrogels. *ASBMR 41st Annual Meeting*, Orlando, FL 2019.
44. Noonan ML, Clinkenbeard EL, Ni P, Tippen SP, Agoro R, **Thompson WR**, Allen MR, White KE. Treating CKD-related anemia with EPO and HIF-PHDi improves FGF23-dependent and -independent outcomes. American Society of Nephrology Kidney Week Conference. District of Columbia, 2019.
45. Wright CS[#], Yi X, Schneider A, Pederson M, Farach-Carson MC, Robling AG, **Thompson WR**. Osteocyte-specific deletion of the auxiliary $\alpha_2\delta_1$ voltage sensitive calcium channel subunit impairs skeletal strength and decreases both lean and fat masses. *49th International Orthopaedic Research Society Sun Valley Workshop on Musculoskeletal Biology*. Sun Valley, ID, 2019.
46. Daniel AL, Ferrari A, Nelson JH, McAndrews K, Cregor M, Ghazzawi Z, **Thompson WR**, Evans-Molina C, Bellido T, Delgado-Calle J. Bone-Derived Sclerostin has Endocrine Actions in Adipocyte Precursors and Pancreatic Beta-Cells. *49th International Orthopaedic Research Society Sun Valley Workshop on Musculoskeletal Biology*. Sun Valley, ID, 2019.
47. Kelly M^{*}, Sharma K, Yi X, Wright CS[#], Noonan M, Gorrell T[@], Gegg A[@], Chenoweth B, Sankar U, Hum JM, Robling AG, Farach-Carson MC, **Thompson WR**. Deletion of the Auxiliary Voltage Sensitive Calcium Channel Subunit and Gabapentin Receptor $\alpha_2\delta_1$ Results in Impaired Skeletal Density, Mass, and Strength. *ASBMR 40th Annual Meeting*, Montreal, Canada 2018.
48. Wright C[#], Yi X, Kelly M^{*}, Sharma K, **Thompson WR**. Deletion of the Auxiliary $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit Regulates Adipogenesis. *ASBMR 40th Annual Meeting*, Montreal, Canada 2018.
49. Yi X, Wright LE, Pagnotti GM[#], Uzer G, Rubin CT, Sankar U, Powell KM, Wallace JM, Mohammed K, Guise TA, **Thompson WR**. Disruption of Nucleo-Cytoskeletal Connectivity Impairs Mechanical Competence of MDA-MB-231 Cells and Regulates Responses to Low Magnitude Mechanical Forces. *ASBMR 40th Annual Meeting*, Montreal, Canada, 2018.

50. Mével E, Li Y, Dadwal UC, **Thompson WR**, Wagner DR, Trippel SB, Allen MR, Burr DB, Sankar U. CaMKK2-AMPK-p38MAPK Axis Regulates the Onset of Post-Traumatic Osteoarthritis. *ASBMR 40th Annual Meeting*, Montreal, Canada, 2018.
51. Noonan ML, Clinkenbeard EL, Ni P, Ivan M, Prideaux M, **Thompson WR**, White KE. Directly Targeting HIF Activity Controls FGF23 Expression and has Implications for Translational Outcomes. *ASBMR 40th Annual Meeting*, Montreal, Canada, 2018.
52. Nelson JH, Davis HM, Mcandrews D, Cregor MD, **Thompson WR**, Plotkin LI, Robling AG, Bellido T, Delgado-Calle J. Sclerostin Regulates Adipocyte Fate and Mediates Paracrine and Endocrine Signaling between Osteocytes and Fat. *ASBMR 40th Annual Meeting*, Montreal, Canada, 2018.
53. Wheeler, JA, Clinkenbeard EL, Noonan ML, **Thompson WR**, White KE. Gabapentin Targeting and Fgf23 Induction: A Novel Mechanism for Increased Fracture Risk in Patients Taking new Class Anti-Epileptic Drugs. *CTSI Indiana Medical Student Program for Research and Scholarship*. Indianapolis, IN, 2018.
54. Dodevska, J, Yi X, Pagnotti GM, Wright LE, Mohammad K, Guise TA, **Thompson WR**. Regulation of Prostate Cancer Cells by Low Magnitude Mechanical Signals. *IUPUI Research Day Symposium*. Indianapolis, IN, 2018.
55. Kelly M*, Sharma K, Wright CS#, Yi X, Gegg A@, Gorrell T@, Noonan M, Robling AG, Hum JM, Farach-Carson MC, **Thompson WR**. Deletion of the Gabapentin Receptor and VSCC Subunit $\alpha_2\delta_1$ Impairs Bone formation and Strength. *133rd Annual Meeting of the Indiana Academy of Science*. Indianapolis, IN, 2018.
56. Sharma K, Noonan M, Yi X, Robling AG, Hum JM, Farach-Carson MC, **Thompson WR**. Mice Lacking the $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit have Impaired Bone Quantity and Decreased Lean Mass. *64th Annual Meeting of the Orthopaedic Research Society*. New Orleans, LA, 2018.
57. Yi X, Wright LE, Pagnotti GM#, Regan JN, Uzer G, Rubin CT, Mohammed K, Guise TA, **Thompson WR**. Mechanical Suppression of Breast Cancer Cell Invasion and Osteoclastogenesis Requires the LINC Nuclear Complex. *APTA Combined Sections Meeting*. New Orleans, LA, 2018.
58. **Thompson WR**, Bayliss AJ, Strunk VA, Altenburger PA. Enhancing Student Clinical Decision Making: Making the Case for a Case Rounds Seminar Course. *Indiana Univ Curriculum Enhancement Symposium*. Indianapolis, IN, 2017.
59. Yi X, Wright LE, Pagnotti GM#, Regan JN, Uzer G, Rubin CT, Mohammed K, Guise TA, **Thompson WR**. Low Magnitude Mechanical Signals Decrease Invasion and Expression of Osteolytic Factors in MDA-MB-231 Breast Cancer Cells, with Subsequent Suppression of Osteoclastogenesis. *ASBMR 39th Annual Meeting*, Denver, CO, 2017.
60. Pagnotti GM#, Wright LE, Regan JA, **Thompson WR**, Mohammed K, Rubin CT, Guise TA. Low Intensity Vibrations Increase Strength, Reduce Fat, and Improve Glucose Tolerance in Mice with Complete Estrogen Deprivation. *ASBMR 39th Annual Meeting*, Denver, CO, 2017.
61. Yi X, Wright LE, Pagnotti GM#, Regan JN, Uzer G, Rubin CT, Mohammed K, Guise TA, **Thompson WR**. Low Magnitude Mechanical Signals Suppress Expression of Osteolytic

Genes in MDA-MB-231 Breast Cancer Cells. *International Cancer and Bone Society Conference*, Indianapolis, IN, 2017.

62. Pagnotti GM[#], **Thompson WR**, Wright L, Regan J, Mohammed K, Rubin CT, Guise TA. Effects of LIV pre-Treatment on Musculoskeletal Endpoints in Mice Following Complete Estrogen Deprivation. *International Cancer and Bone Society Conference*, Indianapolis, IN, 2017.
63. **Thompson WR**, Li Y, Uzer G, Rubin J. Mesenchymal Stem Cell Fate is Influenced by Recruitment of mTORC2 to the Cell Membrane by Myosin Motors. *APTA CSM*. San Antonio, TX, 2017.
64. **Thompson WR**, Li Y, Uzer G, Rubin J. Myosin Motors Direct mTORC2 Recruitment to the Cell Membrane to Regulate MSC Lineage Fate. *ASBMR 38th Annual Meeting*, Atlanta, GA, 2016.
65. Witcher PC, Lee J, Assaf N, Mertz S, Singh K, **Thompson WR**, Robling AG. Improving bone properties and fracture susceptibility: experimental models of genetic manipulation, pharmacologic intervention, and cellular perturbation reveal new approaches for improving bone health. *IUPUI Research Day Symposium*, Indianapolis, IN, 2017.
66. **Thompson WR**, Yen S, Uzer G, Sen B, Xie Z, Styner M, Rubin J. Actin Cytoskeletal Structure Influences MSC Lineage through Balanced Activity of LARG GEF and ARHGAP18. *ASBMR 37th Annual Meeting*, Seattle, WA, 2015.
67. Uzer G, Sen B, Xie Z, **Thompson WR**, Bas G, Styner M, Rubin J. Disruption of Nucleo-Cytoskeletal Connectivity Increases Intranuclear Actin and Enhances MSC Differentiation. *ASBMR 37th Annual Meeting*, Seattle, WA, 2015.
68. **Thompson WR**, Yen S, Uzer G, Sen B, Xie Z, Styner M, Rubin J. Actin Cytoskeletal Structure Influences MSC Lineage through Balanced Activity of LARG GEF and ARHGAP18. *45th International Orthopaedic Research Society Sun Valley Workshop on Musculoskeletal Biology*. Sun Valley, ID, 2015.
69. **Thompson WR**, Yen S, Uzer G, Sen B, Xie Z, Styner M, Rubin J. Targeting RhoA GEFs and GAPs to Direct Mesenchymal Stem Cell Osteogenic Differentiation. *APTA CSM*. Indianapolis, IN, 2015.
70. **Thompson WR**, Uzer G, Yen S, Sen B, Xie Z, Brobst KE, Styner M, Rubin J. Sclerostin is Mechanically and Hormonally Regulated in a Novel *in vitro* Osteocyte Model. *4th Annual IU SHRS Interdisciplinary Research and Education Conference*, Indianapolis, IN, 2014.
71. **Thompson WR**, Yen S, Uzer G, Xie Z, Sen B, Styner M, Burrridge K, Rubin J. LARG GEF and ARHGAP18 GAP Control Cytoskeletal Dynamics to Influence MSC Lineage Allocation. *4th Annual IU SHRS Interdisciplinary Research and Education Conference*, Indianapolis, IN, 2014.
72. **Thompson WR**, Uzer G, Yen S, Sen B, Xie Z, Brobst KE, Styner M, Rubin J. Sclerostin is Mechanically and Hormonally Regulated in a Novel *in vitro* Osteocyte Model. *ASBMR 36th Annual Meeting*, Houston, TX, 2014.
73. **Thompson WR**, Yen S, Uzer G, Xie Z, Sen B, Styner M, Burrridge K, Rubin J. LARG GEF and ARHGAP18 GAP Control Cytoskeletal Dynamics to Influence MSC Lineage Allocation. *ASBMR 36th Annual Meeting*, Houston, TX, 2014.

74. Uzer G, **Thompson WR**, Rubin CT, Judex S, Rubin J. LINCed Nucleus Enables Sensing of High Frequency Vibration but not Strain. *12th International Bone Fluid Flow Workshop*. Houston, TX, 2014.
75. Uzer G, **Thompson WR**, Sen B, Xie Z, Judex S, Rubin CT, Rubin J. LINCed Nucleus Enables Sensing of High Frequency Vibration but not Strain. *7th World Congress of Biomechanics*. Boston, MA, 2014.
76. Yen S, **Thompson WR**, Uzer G, Sen B, Xie Z, Styner M, Rubin J. Mechanical Regulation of LARG and ARHGAP18 Controls RhoA-Mediated Mesenchymal Stem Cell Fate. *George F. Sheldon Resident Research Symposium*, Chapel Hill, NC, 2014.
77. **Thompson WR**, Brobst KE, Uzer G, Yen S, Sen B, Xie Z, Case N, Styner M, Rubin J. Mechanically Activated Fyn Modulates Adipogenic Commitment Through mTORC2/Akt/RhoA Effects of Mesenchymal Stem Cell Cytoskeleton. *ASBMR 35th Annual Meeting*, Baltimore, MD, 2013. ***Nominated for “ASBMR President’s Poster Award”**
78. Uzer G, Sen B, Xie Z, **Thompson WR**, Styner M, Rubin C, Judex S, Rubin J. Enhancement of Nucleo-Cytoskeletal Connectivity by Low Intensity Vibration Augments Mechanosensitivity in Mesenchymal Stem Cells. *ASBMR 35th Annual Meeting*, Baltimore, MD, 2013. ***Received “ASBMR President’s Poster Award”**
79. Styner M, Kadari S, Galior K, **Thompson WR**, Case N, Xie Z, Sen B, Romaine A, Styner M, Pagnotti G, Rubin C, Horowitz M, Rubin J. Running Decreases Marrow Adipose Tissue in Chow and High Fat Fed Mice. *ASBMR 35th Annual Meeting*, Baltimore, MD, 2013.
80. **Thompson WR**, Yen S, Sen B, Xie Z, Case N, Styner M, Guilluy C, Burrridge K, Rubin J. Mechanically Activated Src Induces Activation of RhoA through mTORC2 in Mesenchymal Stem Cells. *ASBMR 34th Annual Meeting*, Minneapolis, MN, 2012.
81. Styner M, Meyer M, Gailor K, Case N, Sen B, Xie Z, **Thompson WR**, Pike J, Rubin J. Mechanical Strain Downregulates C/EBP β in MSC and Decreases Endoplasmic Reticulum Stress. *ASBMR 34th Annual Meeting*, Minneapolis, MN, 2012.
82. Keller B, **Thompson W**, Dahners L, Weinhold P. Whole Body Vibration Stimulates Collagen Expression in The Rat Patellar Tendon In Vivo. *59th Annual Meeting of the Orthopaedic Research Society*, San Antonio, TX, 2013.
83. Price C, **Thompson WR**, Fomin P, Jacobs S, Modla S, Czymmek K, Kirn-Safran CB, Wang L. Anatomical Variability in the Ultrastructure of the Osteocyte Lacunar-Canalicular System. *58th Annual Meeting of the Orthopaedic Research Society*, San Francisco, CA, 2012.
84. **Thompson WR**, Majid AS, Czymmek KJ, Ruff AL, García J, Duncan RL, Farach-Carson MC. Association of the $\alpha_2\delta_1$ Subunit with Ca_v3.2 Enhances Membrane Expression and Regulates Mechanically-Induced ATP Release and ERK1/2 Signaling in Osteocytes. *ASBMR 33rd Annual Meeting*, San Diego, CA, 2011. ***Selected as a plenary poster**
85. **Thompson WR**, Modla S, Grindel BJ, Czymmek KJ, Kirn-Safran CB, Wang L, Duncan RL, Farach-Carson MC. Perlecan/HSPG2 Helps Maintain the Pericellular Space of the Lacuno-Canalicular System Surrounding Osteocytic Processes in Murine Cortical Bone. *ASBMR 32st Annual Meeting*, Toronto, ON, Canada, 2010. ***Received “ASBMR President’s Poster Award”**

86. Fomin P, **Thompson WR**, Sloofman LG, Lowe DA, Price C, Farach-Carson MC, Kirn-Safran CB. Micro-computed tomography analysis of adult bone in mice expressing reduced levels of Perlecan/HSPG2. *ASBMR 32nd Annual Meeting*, Toronto, ON, Canada, 2010.
87. **Thompson WR**, Majid AS, Czymmek KJ, Modla S, García J, Duncan RL, Farach-Carson MC. The Auxiliary $\alpha_2\delta_1$ Voltage Sensitive Calcium Channel Subunit Associates with the T-Type, $Ca_v3.2$ Subunit in Osteocytes: A Link to the Extracellular Environment. *ASBMR 31st Ann Meeting*, Denver, CO, 2009.
88. Boggs M, **Thompson WR**, Theilacker W, Beebe TP, Farach-Carson MC, Duncan RL. Osteocyte-Neuron Communication in Co-Culture: A Role for Purinergic Signaling in Nociceptive Bone. *ASBMR 31st Annual Meeting*, Denver, CO, 2009.
89. Majid AS, **Thompson WR**, Czymmek KJ, Duncan RL, Farach-Carson MC. Structure of Voltage Sensitive Calcium Channels in Mechanosensitive Osteocytes. *The Federation of American Societies for Experimental Biology*, New Orleans, Louisiana, 2009.
90. **Thompson WR**, Majid AS, Modla S, Czymmek KJ, Garcia J, Duncan RL, Farach-Carson MC. Osteocytic Cells Express the T-Type, $Ca_v3.2$ Voltage Sensitive Calcium Channel that Complexes with the $\alpha_2\delta_1$ Extracellular Subunit: A possible Link to the Extracellular Environment. *University of Delaware Center for Biomedical Engineering Research Symposium*, Newark, DE, 2009.
91. **Thompson WR**, Majid AS, Czymmek KJ, Modla S, Wang L, Duncan RL, Farach-Carson MC. Voltage Sensitive Calcium Channel Structure in Osteocytes: Implications in Bone Remodeling. *55th Annual Meeting of the Orthopaedic Research Society*, Abstract ID ORS2009-2465, Las Vegas NV, 2009.
92. **Thompson WR**, Majid AS, Czymmek KJ, Wang L, Duncan RL, Farach-Carson MC. Exploring the Role of Calcium Channels in Mechanosensitive Osteocytes. *NIH, NCRR 2nd Biennial National IDeA Symposium of Biomed Research Excellence*, Washington DC, 2008.
93. **Thompson WR**, Majid AS, Czymmek KJ, Wang L, Duncan RL, Farach-Carson MC. Mechanotransduction in Osteocytes: Exploring Interactions of the ECM with Calcium Channels. *University of Delaware Center for Biomedical Engineering Research Symposium*, Newark, DE, 2008.
94. Majid AS, **Thompson WR**, Farach-Carson MC. Characterization of Voltage Sensitive Calcium Auxiliary Subunits in MLO-Y4 Osteocyte-Like Cells. *UD/HHMI Undergrad Research Symp*, Newark, DE, 2008.
95. **Thompson WR**, Majid AS, Shao Y, Duncan RL, Farach-Carson MC. Mechanotransduction: implications in rehabilitation and the role of voltage gated calcium channels. *ACRM-ASNR Joint Educational Conference*. 2007.
96. **Thompson WR**, Majid AS, Shao Y, Farach-Carson MC. Characterization of voltage sensitive calcium channel subunits in MLO-Y4 Osteocytes. *2nd Northeast Regional IDeA Meeting*, Burlington VT, 2007.
97. **Thompson WR**, Chesley AT, Crow MT. Exploring novel protein interactions involving ARC in a yeast-two-hybrid system. *National American Chemical Society Meeting*, Anaheim CA, 2004.

Invited Presentations (all oral talks)

98. Disrupting Communication Between Breast Cancer and Bone... Forcing the Issue. *University of Alabama at Birmingham, Department Biomedical Engineering*, Birmingham, AL, Nov 2021.
99. Skeletal Mechanosensation: The Gabapentin Connection. *University of Alabama at Birmingham, Department of Physical Medicine and Rehabilitation Grand Rounds*, Birmingham, AL, Sep 2021.
100. Mechanical Signals Deter Bone Loss and Muscle Weakness in the Setting of Breast Cancer Bone Metastasis. *The University of Texas MD Anderson Cancer Center, Department of Genitourinary Medical Oncology*, Houston, TX, May 2021. Co-presented with Gabriel Pagnotti, PhD and Tarah Ballinger, MD
101. Osteocyte Mechanotransduction: Matrix to Membrane Tethering. *University of California at Davis, School of Veterinary Medicine*, Davis, CA, Jun 2020.
102. Mechanobiology of Bone: Osteoprogenitors to Osteocytes. *Marian University, Program in Biomedical Sciences*, Indianapolis, IN, Oct 2018.
103. Osteocyte Mechanotransduction: Matrix to the Membrane. *Washington University in St. Louis, Program in Physical Therapy*, St. Louis, MO, Oct 2018.
104. Influence of Low Magnitude Mechanical Signals on Breast Cancer Cells *In Vitro*. *Indiana University, Simon Cancer Center, Tumor Microenvironment and Metastasis Program*, Indianapolis, IN, Sep 2018
105. Mechanical Regulation of Bone Cells. *University of the Sciences, Department of Physical Therapy*, Philadelphia, PA, Nov 2017.
106. Mechanical Control of MSC Fate: The Role of the Actin Cytoskeleton. 6th Annual Symposium on Regenerative Rehabilitation, Pittsburgh, PA, Nov 2017.
107. Response of Cancer Cells to Mechanical Force. *Department of Biomedical Engineering, Indiana University-Purdue University Indianapolis*, Indianapolis, IN, Oct 2017.
108. Low Magnitude Mechanical Forces: Preserving Musculoskeletal Competence and Restricting Cancer Progression. *IU Tumor Microenvironment & Metastasis Meeting*, Indianapolis, IN, Oct 2015.
109. Mechanical Signaling in Bone Marrow Stem Cells. *Eli Lilly and Company*, Indianapolis, IN, Jan 2015.
110. Sclerostin is Mechanically and Hormonally Regulated in a Novel *in vitro* Osteocyte Model. *University of North Carolina, Department of Medicine*, May 2014.
111. Physical Activity Promotes Bone Strength from the MSC to the Osteocyte. *Indiana University, Department of Physical Therapy*, Jan 2014.
112. PPAR β/δ Governs Wnt Signaling and Bone Turnover, *University of North Carolina, School of Medicine, Division of Endocrinology Grand Rounds*, Sept 2013.
113. Return to Community Participation Post Traumatic Brain Injury, *University of North Carolina, Division of Physical Therapy Grand Rounds*, Mar 2013.
114. Intracellular VEGF Regulates the Balance between Osteoblast and Adipocyte Differentiation. *University of North Carolina, School of Medicine, Division of Endocrinology Grand Rounds*, Jan 2013.

115. Mechanical Regulation of Mesenchymal Stem Cell Lineage Commitment. *University of Delaware, Biomechanics and Movement Science Seminar*, Aug 2012.
116. GSα Enhances Commitment of Mesenchymal Progenitors to the Osteoblast Lineage but Restrains Osteoblast Differentiation in Mice, *University of North Carolina, School of Medicine, Division of Endocrinology Grand Rounds*, Jul 2012.
117. Molecular Biomechanics: Interdisciplinary Methods and Techniques. *University of Delaware, Biomechanics and Movement Science Seminar*, Feb 2011.

SERVICE

University of Alabama at Birmingham Service – School

2022 **Member/Reviewer**, School of Health Professions Faculty Grant Review Committee

Indiana University Service – Department

2015 – Present **Faculty Advisor**, Dept. of Physical Therapy (12-14 students/year)
 2014 – Present **Chair**, Fundraising Committee, IU Department of Physical Therapy
 2014 – Present **Member**, Dept. of Physical Therapy Admissions Interview Team
 2022 – Present **Member**, Dept. of Physical Therapy Admissions Committee
 2015 – 2021 **Member**, Dept. of Physical Therapy Awards Committee
 2016 – 2021 **Member**, Dept. of Physical Therapy Scholarship Committee
 2016 – 2021 **Member**, Dept. of Anatomy & Cell Biology T32 Selection Committee

Indiana University Service – School

2023 – Present **Member**, School of Health & Human Sciences Budgetary Affairs Committee
 2016 – 2019 **Faculty Advisor**, School of Health and Rehab Sciences Student Council
 2016 – 2017 **Member**, School of Health and Rehab Sciences Governance Committee

Indiana University Service – Campus/University

2024 **Ad Hoc Member**, Cagiantas Scholarship Review Committee, Indiana University School of Medicine
 2022 – Present **Member**, Indiana Center for Musculoskeletal Health Education Committee
 2022 – Present **Co-Leader**, Indiana Center for Musculoskeletal Health Mechanobiology & Muscle-Bone Crosstalk Research Team
 2022 – Present **Co-Director**, Indiana Center for Musculoskeletal Health Skeletal Muscle and Mechanobiology Core Facility
 2022 – 2023 **Member**, Indiana Biomedical Gateway PhD Program Admissions Committee
 2019 **Member/Reviewer**, Indiana Center for Musculoskeletal Health Pilot Grant Review Committee

2018 – 2021 **Member**, Indiana Center for Musculoskeletal Health Mechanobiology Grant Proposal Review Subcommittee

2018 – 2021 **Co-Director**, Indiana Center for Musculoskeletal Health Mechanobiology Core Facility

2018 – 2021 **Co-Leader**, Indiana Center for Musculoskeletal Health Mechanobiology Team

2017 – 2021 **Member**, Continuing Medical Education Advisory Committee

2017 – 2021 **Member**, Indiana Center for Musculoskeletal Health Mechanobiology & Muscle/Bone Crosstalk

2017 – 2021 **Member**, Clinical and Translational Sciences Institute Transgenic Mouse Core Facility Advisory Committee

2015 **Member/Reviewer**, Clinical and Translational Sciences Institute Core Pilot Grant Review Committee

Professional Service – Local

Professional Service – National

2021 **Ad Hoc Member**, *Skeletal Biology Structure and Regeneration (SBSR)* Study Section, NIH, NIAMS

Professional Service – International

2016 – Present **Editorial Board Member**, Scientific Reports (Nature Publishers)

2019 **Editorial Board Member**, Heliyon (Elsevier Publishers)

2015 – 2017 **Member**, American Society of Bone and Mineral Research Young Investigator Subcommittee

2017 **Poster Judge**, Diversity Poster Competition, American Society of Bone and Mineral Research Annual Conference, Denver, CO

2017 **Poster Judge**, 6th Annual Symposium on Regenerative Rehabilitation, Pittsburgh, PA

2017 **Discussion Leader**, Clinical Special Interest Group, 6th Annual Symposium on Regenerative Rehabilitation, Pittsburgh, PA

2018 **Abstract Reviewer**, American Society of Bone and Mineral Research Annual Conference, Montreal Canada

2015 **Ad hoc Reviewer**, Stem Cells

2015 **Ad hoc Reviewer**, Bone Key

2015 **Ad hoc Reviewer**, Biochimie

2015 **Ad hoc Reviewer**, Cell Biology International

2015, ‘17 **Ad hoc Reviewer**, Histology and Histopathology

2015, ‘16, ‘17, ‘20 **Ad hoc Reviewer**, Journal of Orthopedic Research

2016, ‘17 **Ad hoc Reviewer**, Journal of Biomechanics

2016, ‘17 **Ad hoc Reviewer**, Journal of Bone and Mineral Metabolism

2016 **Ad hoc Reviewer**, Calcified Tissue International

2016 **Ad hoc Reviewer**, Experimental Cell Research

2016, ‘17 **Ad hoc Reviewer**, PLoS One

2017 **Ad hoc Reviewer**, Annals of the New York Academy of Science

2017, '18, '19, '20, '21	<i>Ad hoc Reviewer</i> , Bone
2017	<i>Ad hoc Reviewer</i> , Molecular Nutrition and Food Research
2017, '18	<i>Ad hoc Reviewer</i> , Scientific Reports
2018, '20	<i>Ad hoc Reviewer</i> , Heliyon
2018	<i>Ad hoc Reviewer</i> , Matrix Biology
2018	<i>Ad hoc Reviewer</i> , The FEBS Journal
2018	<i>Ad hoc Reviewer</i> , Journal of Cellular Biochemistry
2019	<i>Ad hoc Reviewer</i> , Journal of Biological Engineering
2019	<i>Ad hoc Reviewer</i> , Cell Communication and Signaling
2020	<i>Ad hoc Reviewer</i> , Stem Cells Translational Medicine
2020	<i>Ad hoc Reviewer</i> , Microgravity
2020	<i>Ad hoc Reviewer</i> , FASEB