

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



**CONTACT INFORMATION**

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Department of Physical Therapy  
School of Health & Human Sciences  
Indiana University  
Indianapolis, IN 46202

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**SPECIFIC AREAS OF EXPERTISE**

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- Physical therapy standard of care in acute care, outpatient, and sub-acute 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

**EDUCATION**

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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

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2022 – Present	Physical Therapist, Indiana University Methodist Hospital, Indianapolis, IN 46202 <ul style="list-style-type: none"><li>○ <i>Acute care environment. Orthopedic trauma, joint replacement, medical/surgical conditions, cardiovascular surgery, fractures, falls</i></li></ul>
2014 – 2021	Physical Therapist, Indiana University Methodist Hospital, Indianapolis, IN 46202 <ul style="list-style-type: none"><li>○ <i>Acute care environment. Orthopedic trauma, joint replacement, medical/surgical conditions, cardiovascular surgery, fractures, falls</i></li></ul>
2007 – 2021	Physical Therapist, Bayhealth Kent General Hospital, Dover, DE 19901 <ul style="list-style-type: none"><li>○ <i>Acute care environment. Orthopedic trauma, joint replacement, medical/surgical conditions, cardiovascular surgery, fractures, falls, neurological conditions (i.e., stroke, TIA)</i></li></ul>
2012 – 2014	Physical Therapist, Central Carolina Hospital, Sanford, NC 27237 <ul style="list-style-type: none"><li>○ <i>Acute care environment. Orthopedic trauma, joint replacement, medical/surgical conditions, cardiovascular conditions, fractures, falls, neurological conditions (i.e., stroke, TIA)</i></li></ul>
2011 – 2014	Physical Therapist, University of North Carolina Hospitals, Chapel Hill, NC 27514 <ul style="list-style-type: none"><li>○ <i>Acute care environment. Orthopedic trauma, joint replacement, medical/surgical conditions, cardiovascular surgery, fractures, falls, neurological conditions (i.e., stroke, TIA)</i></li></ul>
2007 – 2009	Physical Therapist & Clinical Instructor, University of Delaware Neurological and Older Adult Clinic, Newark, DE 19716 <ul style="list-style-type: none"><li>○ <i>Treating geriatric patients in outpatient setting with neurological conditions (i.e., stroke, parkinson's disease, multiple sclerosis) orthopedic injuries, joint replacement</i></li></ul>

## PROFESSIONAL LICENSES AND CERTIFICATIONS

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

## ACADEMIC APPOINTMENTS

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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**

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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

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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

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### Research

2021	<b>IUPUI Research Trailblazer Award</b> , Indiana University
2020	<b>ICMH Paper of the Year</b> , 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	<b>Excellence in Emerging Research Award</b> , Indiana University – School of Health & Human Sciences
2017	<b>Excellence in Emerging Research Award</b> , Indiana University – School of Health and Rehabilitation Sciences
2017	<b>John Haddad Young Investigator Award</b> , Advances in Mineral Metabolism – American Society of Bone and Mineral Research
2015	<b>Excellence in Emerging Research and Scholarship Award</b> , Indiana University – School of Health and Rehabilitation Sciences
2015	<b>Young Investigator Travel Award</b> , American Society of Bone and Mineral Research
2015	<b>Alice L. Jee Young Investigator Award</b> , Orthopedic Research Society's 45 <sup>th</sup> Annual International Sun Valley Workshop
2014	<b>Outstanding Abstract Award</b> , International Congress of Endocrinology & Endocrine Society

- 2013 **Selected Attendee**, Endocrine Fellows Foundation Workshop
- 2011 **Young Investigator Travel Award**, American Society of Bone and 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 and 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 Association Geriatrics Section

Teaching

- 2016 **Excellence in Emerging Teaching Award**, Indiana University School of Health and 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 **2<sup>nd</sup> Place Research Presentation**, Tennessee Academy of Science Symposium
- 2000 **Excellence in Writing and Composition Award**, Lee University

**TEACHING**

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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)
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**Department of Mechanical Engineering, Boise State University**

ME 602	Mechanobiology	3 credit hour (lecture)
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**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	<b>Curriculum Enhancement Grant – Travel Grant</b> Role: Principal Investigator Agency: Indiana University Center for Teaching and Learning Amount: \$1,000
2016 – 2017	<b>Creation of Case Series Rounds Courses for Enhancement of Clinical Decision Making and Interdisciplinary Interactions</b> 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**

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### Active Research Grants

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| 2021 – 2023 | <b>Generation of a Novel Mouse Model to Restore/Overexpress the <math>\alpha 2\delta 1</math> VSCC Subunit</b><br>Role: Principal Investigator<br>Agency: Indiana University Clinical and Translational Sciences Institute<br>Mechanism: Core Pilot Grant<br>Grant #: UL1 TR001108, Dates: 01/15/21 – 01/14/23<br>Amount: \$10,000 |
| 2018 – 2023 | <b>Osteocyte Mechanotransduction and the Gabapentin-Sensitive Matrix-Channel Tethering Complex</b><br>Role: Principal Investigator<br>Agency: NIH (NIAMS)<br>Impact Score (A0): 28, Percentile: 10.0<br>Grant #: 1R01AR074473-01, Dates: 09/20/18 – 06/30/24<br>Amount: \$2,854,673  |
| 2018 – 2023 | <b>Loading and Drug Synergy Protect Bone from Pathological Collagen Synthesis</b><br>Role: Co-Investigator, PI: Joseph Wallace<br>Agency: NIH (NIAMS)<br>Impact Score (A1): 22, Percentile: 6.0<br>Grant #: 1R01AR072609-01, Dates: 07/01/18 – 06/30/23<br>Amount: \$1,968,750 (\$23,492 allocated to Thompson)                    |

### Completed Research Grants

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|-------------|--|
| 2021 – 2022 | <b>Skeletal Consequences of Osteocyte-Specific Deletion of PLN</b> |
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- 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 – 2<sup>nd</sup> 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*: 22, *i10-index*: 30, total citations: 2,054 (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<sub>v</sub>3.2 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 $\beta$  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**, Dahners 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, Burr ridge K, Rubin J. Cell Mechanosensitivity to Extremely Low Magnitude Signals is Enabled by a LINCed nucleus. *Stem Cells.* 2015;33(6):2063-76.
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*Peer-Reviewed Manuscripts – Under Review*

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. *Submitted to Current Osteoporosis Reports* [IF: 5.163]

46. 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. *Submitted to Bone Research* [IF: 13.362]  
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47. **\*Thompson WR**, \*Kronbergs A, Shao Y, Farach-Carson MC, Duncan RL. Knockout of T-type  $\text{Ca}_v3.2$  ( $\alpha_{1H}$ ) 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]  
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48. 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. *Submitted to Journal of Bone and Mineral Research* [IF: 6.741]
49. Ballinger TJ, **Thompson WR**, Guise TA. The Bone-Muscle Connection in Breast Cancer: Implications and Therapeutic Strategies to Preserve Musculoskeletal Health. *Submitted to Breast Cancer Research* [IF: 6.488]
50. 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. *Submitted to Bone Research* [IF: 13.567]
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52. Singh H, Moore BA, Saag K, Rathore R, Bemben DA, **Thompson WR**, Fisher G, Modlesky CM, Hunter GR. Skeletal Effects of Muscle Lengthening Exercise: A Scoping Review.
53. Agoro R, Nookaew I, Noona ML, Marambio YG, Liu S, Chang W, Gao H, Hoggatt AM, **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 CKD. *Submitted to The Journal of Experimental Medicine* [IF: 17.579]

Peer-Reviewed Manuscripts – In Preparation

54. Pagnotti GM, Pattyn RR, John SK, Trivedi T, Wright LE, Wilson RS, Murthy S, Watson L, She Y, Suresh S, Willis MS, Rubin CT, **Thompson WR**, Mohammad KS, Guise TA. Low Magnitude Mechanical Signals Combined with Zoledronic Acid Suppress Vertebral Bone Loss, Muscle Weakness, and Adipose Accrual in Mice Undergoing Complete Estrogen-Deprivation.



55. Wright CS, Lewis KJ, Semon KS, Reyes Fernandez, PC, Yi X, Rust K, Schneider A, Pederson M, Sankar U, Hum JM, Farach-Carson MC, Robling AG, **Thompson WR**. Deletion of the auxiliary  $\alpha_2\delta_1$  voltage sensitive calcium channel subunit in osteocytes impairs femur strength and load-induced bone formation in mice.
56. Reyes-Fernandez P, Farach-Carson MC, **Thompson WR**. Functions of Proteoglycans in Bone.
57. 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 D<sub>3</sub> 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, 1<sup>st</sup> 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 43<sup>rd</sup> Annual Meeting*, San Diego, CA 2021.

4. Wright CS<sup>#</sup>, Yi X, Semon KS<sup>\*</sup>, Schneider A<sup>\*</sup>, Pederson M<sup>@</sup>, 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<sup>#</sup>, Semon KS<sup>\*</sup>, Schneider A<sup>\*</sup>, Pederson M<sup>@</sup>, 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<sup>\*</sup>, Wright CS<sup>#</sup>, 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 10<sup>th</sup> Annual Meeting*. Indianapolis, IN, 2020.
7. Wright CS<sup>#</sup>, Yi X, Semon KS<sup>\*</sup>, Schneider A<sup>\*</sup>, Pederson M<sup>@</sup>, 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<sup>#</sup>, Yi X, Schneider A<sup>\*</sup>, Pederson M<sup>@</sup>, 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<sup>#</sup>, 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<sup>#</sup>, Yi X, Schneider A<sup>\*</sup>, Pederson M<sup>@</sup>, 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 41<sup>st</sup> 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 41<sup>st</sup> Annual Meeting*. Orlando, FL, 2019.
12. Kelly M<sup>\*</sup>, Sieger J<sup>\*</sup>, Baghdady A<sup>\*</sup>, Sharma K<sup>\*</sup>, Yi X, Wright CS<sup>#</sup>, 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<sup>#</sup>, 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 40<sup>th</sup> Annual Meeting*. Montreal, Canada, 2018.

14. **Thompson WR.** Mechanical Control of MSC Fate: The Role of the Actin Cytoskeleton. *6<sup>th</sup> 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  $\beta$ -Catenin Nuclear Transport. *45<sup>th</sup> 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. *12<sup>th</sup> 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? *12<sup>th</sup> 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  $\beta$ catenin and its nuclear transport. *ASBMR 36<sup>th</sup> Annual Meeting*. Houston, TX, 2014.
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23. Yen S, **Thompson WR**, Uzer G, Xie Z, Sen B, Case N, Styner M, Burrige K, Rubin J. Regulation of RhoA through the GTPase Activating Protein ARHGAP18 is Critical for Mesenchymal Stem Cell Lineage Commitment. *96<sup>th</sup> 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. *11<sup>th</sup> 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. *7<sup>th</sup> 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? *10<sup>th</sup> 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. 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 43<sup>rd</sup> Annual Meeting*, San Diego, CA 2021. **\*Selected as a plenary poster**
29. 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 43<sup>rd</sup> Annual Meeting*, San Diego, CA 2021.
30. Wright CS<sup>#</sup>, Semon KM<sup>\*</sup>, Kelly M<sup>\*</sup>, 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 43<sup>rd</sup> Annual Meeting*, San Diego, CA 2021. **\*Received Young Investigator Travel Award**
31. 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 43<sup>rd</sup> Annual Meeting*, San Diego, CA 2021.
32. Lewis KJ, Rust K, Wright CS<sup>#</sup>, 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 43<sup>rd</sup> Annual Meeting*, San Diego, CA 2021.
33. Agoro R, Noonan ML, Gao H, Marambio YG, **Thompson WR**, Xuei X, Liu Y, Robling AG, Bonewald LF, White KE. Osteocyte scRNAseq Reveals Heterogeneous Differentiation Status and an Initial Framework for Chronic Disease Pathology. *ASBMR 43<sup>rd</sup> Annual Meeting*, San Diego, CA 2021.
34. 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 43<sup>rd</sup> Annual Meeting*, San Diego, CA 2021.
35. Reyes Fernandez P<sup>#</sup>, Wright CS<sup>#</sup>, 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 43<sup>rd</sup> Annual Meeting*, San Diego, CA 2021. **\*Received Young Investigator Travel Award**
36. Clinkenbeard EL, Edwards DF, Wright CS, **Thompson WR**. Differential Iron Requirements of Osteoblast and Adipocyte Differentiation. *ASBMR 42<sup>nd</sup> Annual Meeting*, Seattle, WA 2020.
37. Pagnotti GM<sup>#</sup>, 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 42<sup>n</sup> Annual Meeting*, Seattle, WA 2020.
38. Semon KS, Wright CS<sup>#</sup>, 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.
  39. Wright CS<sup>#</sup>, 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.
  40. 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 41<sup>st</sup> Annual Meeting*, Orlando, FL 2019.
  41. Pagnotti GM<sup>#</sup>, 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 41<sup>st</sup> Annual Meeting*, Orlando, FL 2019.
  42. Wu D, **Thompson WR**, Farach-Carson MC. Morphological and Molecular Equivalence of Osteocytes in Biomimetic Hydrogels. *ASBMR 41<sup>st</sup> Annual Meeting*, Orlando, FL 2019.
  43. 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.
  44. Wright CS<sup>#</sup>, 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. *49<sup>th</sup> International Orthopaedic Research Society Sun Valley Workshop on Musculoskeletal Biology*. Sun Valley, ID, 2019.
  45. 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. *49<sup>th</sup> International Orthopaedic Research Society Sun Valley Workshop on Musculoskeletal Biology*. Sun Valley, ID, 2019.
  46. Kelly M<sup>\*</sup>, Sharma K, Yi X, Wright CS<sup>#</sup>, Noonan M, Gorrell T<sup>@</sup>, Gegg A<sup>@</sup>, 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 40<sup>th</sup> Annual Meeting*, Montreal, Canada 2018.
  47. Wright C<sup>#</sup>, Yi X, Kelly M<sup>\*</sup>, Sharma K, **Thompson WR**. Deletion of the Auxiliary  $\alpha_2\delta_1$  Voltage Sensitive Calcium Channel Subunit Regulates Adipogenesis. *ASBMR 40<sup>th</sup> Annual Meeting*, Montreal, Canada 2018.
  48. Yi X, Wright LE, Pagnotti GM<sup>#</sup>, 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 40<sup>th</sup> Annual Meeting*, Montreal, Canada, 2018.
49. 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 40<sup>th</sup> Annual Meeting*, Montreal, Canada, 2018.
  50. 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 40<sup>th</sup> Annual Meeting*, Montreal, Canada, 2018.
  51. 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 40<sup>th</sup> Annual Meeting*, Montreal, Canada, 2018.
  52. 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.
  53. 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.
  54. 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. *133<sup>rd</sup> Annual Meeting of the Indiana Academy of Science*. Indianapolis, IN, 2018.
  55. 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. *64<sup>th</sup> Annual Meeting of the Orthopaedic Research Society*. New Orleans, LA, 2018.
  56. 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.
  57. **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.
  58. 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 39<sup>th</sup> Annual Meeting*, Denver, CO, 2017.
  59. 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 39<sup>th</sup> Annual Meeting*, Denver, CO, 2017.

60. Yi X, Wright LE, Pagnotti GM<sup>#</sup>, 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.
61. Pagnotti GM<sup>#</sup>, **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.
62. **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.
63. **Thompson WR**, Li Y, Uzer G, Rubin J. Myosin Motors Direct mTORC2 Recruitment to the Cell Membrane to Regulate MSC Lineage Fate. *ASBMR 38<sup>th</sup> Annual Meeting*, Atlanta, GA, 2016.
64. 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.
65. **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 37<sup>th</sup> Annual Meeting*, Seattle, WA, 2015.
66. 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 37<sup>th</sup> Annual Meeting*, Seattle, WA, 2015.
67. **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. *45<sup>th</sup> International Orthopaedic Research Society Sun Valley Workshop on Musculoskeletal Biology*. Sun Valley, ID, 2015.
68. **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.
69. **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. *4<sup>th</sup> Annual IU SHRS Interdisciplinary Research and Education Conference*, Indianapolis, IN, 2014.
70. **Thompson WR**, Yen S, Uzer G, Xie Z, Sen B, Styner M, Burrige K, Rubin J. LARG GEF and ARHGAP18 GAP Control Cytoskeletal Dynamics to Influence MSC Lineage Allocation. *4<sup>th</sup> Annual IU SHRS Interdisciplinary Research and Education Conference*, Indianapolis, IN, 2014.
71. **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 36<sup>th</sup> Annual Meeting*, Houston, TX, 2014.

72. **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 36<sup>th</sup> Annual Meeting*, Houston, TX, 2014.
73. Uzer G, **Thompson WR**, Rubin CT, Judex S, Rubin J. LINCed Nucleus Enables Sensing of High Frequency Vibration but not Strain. *12<sup>th</sup> International Bone Fluid Flow Workshop*. Houston, TX, 2014.
74. 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. *7<sup>th</sup> World Congress of Biomechanics*. Boston, MA, 2014.
75. 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.
76. **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 35<sup>th</sup> Annual Meeting*, Baltimore, MD, 2013. **\*Nominated for “ASBMR President’s Poster Award”**
77. 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 35<sup>th</sup> Annual Meeting*, Baltimore, MD, 2013. **\*Received “ASBMR President’s Poster Award”**
78. 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 35<sup>th</sup> Annual Meeting*, Baltimore, MD, 2013.
79. **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 34<sup>th</sup> Annual Meeting*, Minneapolis, MN, 2012.
80. Styner M, Meyer M, Gailor K, Case N, Sen B, Xie Z, **Thompson WR**, Pike J, Rubin J. Mechanical Strain Downregulates C/EBP $\beta$  in MSC and Decreases Endoplasmic Reticulum Stress. *ASBMR 34<sup>th</sup> Annual Meeting*, Minneapolis, MN, 2012.
81. Keller B, **Thompson W**, Dahners L, Weinhold P. Whole Body Vibration Stimulates Collagen Expression in The Rat Patellar Tendon In Vivo. *59<sup>th</sup> Annual Meeting of the Orthopaedic Research Society*, San Antonio, TX, 2013.
82. 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. *58<sup>th</sup> Annual Meeting of the Orthopaedic Research Society*, San Francisco, CA, 2012.
83. **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 $_v$ 3.2 Enhances Membrane Expression and Regulates Mechanically-Induced ATP Release and ERK1/2 Signaling in Osteocytes. *ASBMR 33<sup>rd</sup> Annual Meeting*, San Diego, CA, 2011. **\*Selected as a plenary poster**
84. **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 32<sup>st</sup>*



*Annual Meeting*, Toronto, ON, Canada, 2010. \*Received “ASBMR President’s Poster Award”

85. 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 32<sup>nd</sup> Annual Meeting*, Toronto, ON, Canada, 2010.
86. **Thompson WR**, Majid AS, Czymbek 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 31<sup>st</sup> Ann Meeting*, Denver, CO, 2009.
87. 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 31<sup>st</sup> Annual Meeting*, Denver, CO, 2009.
88. Majid AS, **Thompson WR**, Czymbek 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.
89. **Thompson WR**, Majid AS, Modla S, Czymbek 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.
90. **Thompson WR**, Majid AS, Czymbek KJ, Modla S, Wang L, Duncan RL, Farach-Carson MC. Voltage Sensitive Calcium Channel Structure in Osteocytes: Implications in Bone Remodeling. *55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society*, Abstract ID ORS2009-2465, Las Vegas NV, 2009.
91. **Thompson WR**, Majid AS, Czymbek KJ, Wang L, Duncan RL, Farach-Carson MC. Exploring the Role of Calcium Channels in Mechanosensitive Osteocytes. *NIH, NCRR 2<sup>nd</sup> Biennial National IDEa Symposium of Biomed Research Excellence*, Washington DC, 2008.
92. **Thompson WR**, Majid AS, Czymbek 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.
93. 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.
94. **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.
95. **Thompson WR**, Majid AS, Shao Y, Farach-Carson MC. Characterization of voltage sensitive calcium channel subunits in MLO-Y4 Osteocytes. *2<sup>nd</sup> Northeast Regional IDEa Meeting*, Burlington VT, 2007.

96. **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)*

97. Disrupting Communication Between Breast Cancer and Bone... Forcing the Issue. *University of Alabama at Birmingham, Department Biomedical Engineering*, Birmingham, AL, Nov 2021.

98. Skeletal Mechanosensation: The Gabapentin Connection. *University of Alabama at Birmingham, Department of Physical Medicine and Rehabilitation Grand Rounds*, Birmingham, AL, Sep 2021.

99. 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

100. Osteocyte Mechanotransduction: Matrix to Membrane Tethering. *University of California at Davis, School of Veterinary Medicine*, Davis, CA, Jun 2020.

101. Mechanobiology of Bone: Osteoprogenitors to Osteocytes. *Marian University, Program in Biomedical Sciences*, Indianapolis, IN, Oct 2018.

102. Osteocyte Mechanotransduction: Matrix to the Membrane. *Washington University in St. Louis, Program in Physical Therapy*, St. Louis, MO, Oct 2018.

103. 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

104. Mechanical Regulation of Bone Cells. *University of the Sciences, Department of Physical Therapy*, Philadelphia, PA, Nov 2017.

105. Mechanical Control of MSC Fate: The Role of the Actin Cytoskeleton. 6<sup>th</sup> Annual Symposium on Regenerative Rehabilitation, Pittsburgh, PA, Nov 2017.

106. Response of Cancer Cells to Mechanical Force. *Department of Biomedical Engineering, Indiana University-Purdue University Indianapolis*, Indianapolis, IN, Oct 2017.

107. Low Magnitude Mechanical Forces: Preserving Musculoskeletal Competence and Restricting Cancer Progression. *IU Tumor Microenvironment & Metastasis Meeting*, Indianapolis, IN, Oct 2015.

108. Mechanical Signaling in Bone Marrow Stem Cells. *Eli Lilly and Company*, Indianapolis, IN, Jan 2015.

109. Sclerostin is Mechanically and Hormonally Regulated in a Novel *in vitro* Osteocyte Model. *University of North Carolina, Department of Medicine*, May 2014.

110. Physical Activity Promotes Bone Strength from the MSC to the Osteocyte. *Indiana University, Department of Physical Therapy*, Jan 2014.

111. PPAR $\beta/\delta$  Governs Wnt Signaling and Bone Turnover, *University of North Carolina, School of Medicine, Division of Endocrinology Grand Rounds*, Sept 2013.

112. Return to Community Participation Post Traumatic Brain Injury, *University of North Carolina, Division of Physical Therapy Grand Rounds*, Mar 2013.
113. Intracellular VEGF Regulates the Balance between Osteoblast and Adipocyte Differentiation. *University of North Carolina, School of Medicine, Division of Endocrinology Grand Rounds*, Jan 2013.
114. Mechanical Regulation of Mesenchymal Stem Cell Lineage Commitment. *University of Delaware, Biomechanics and Movement Science Seminar*, Aug 2012.
115. GS $\alpha$  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.
116. Molecular Biomechanics: Interdisciplinary Methods and Techniques. *University of Delaware, Biomechanics and Movement Science Seminar*, Feb 2011.

## **SERVICE**

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### *University of Alabama at Birmingham Service – School*

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

### *Indiana University Service – Department*

2014 – 2021            **Chair**, Fundraising Committee, IU Department of Physical Therapy  
 2014 – 2021            **Member**, Dept. of Physical Therapy Admissions Interview Team  
 2015 – 2021            **Faculty Advisor**, Dept. of Physical Therapy (12-14 students/year)  
 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*

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*

2015                    **Member/Reviewer**, Clinical and Translational Sciences Institute Core Pilot Grant Review Committee  
 2017 – 2021            **Member**, Clinical and Translational Sciences Institute Transgenic Mouse Core Facility Advisory Committee  
 2017 – 2021            **Member**, Continuing Medical Education Advisory Committee  
 2017 – 2021            **Member**, Indiana Center for Musculoskeletal Health Mechanobiology & Muscle/Bone Crosstalk  
 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  
 2019 **Member/Reviewer**, Indiana Center for Musculoskeletal Health 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**, 6<sup>th</sup> Annual Symposium on Regenerative Rehabilitation, Pittsburgh, PA  
 2017 **Discussion Leader**, Clinical Special Interest Group, 6<sup>th</sup> 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 **Ad hoc Reviewer**, Bone  
 2017 **Ad hoc Reviewer**, Molecular Nutrition and Food Research  
 2017, '18 **Ad hoc Reviewer**, Scientific Reports  
 2018, '20 **Ad hoc Reviewer**, Heliyon  
 2018 **Ad hoc Reviewer**, Matrix Biology  
 2018 **Ad hoc Reviewer**, The FEBS Journal  
 2018 **Ad hoc Reviewer**, Journal of Cellular Biochemistry

2019 *Ad hoc* Reviewer, Journal of Biological Engineering  
2019 *Ad hoc* Reviewer, Cell Communication and Signaling  
2020 *Ad hoc* Reviewer, Stem Cells Translational Medicine  
2020 *Ad hoc* Reviewer, Microgravity  
2020 *Ad hoc* Reviewer, FASEB