

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

CONTACT INFORMATION

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Indiana University
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EDUCATION

Postdoctoral Fellowship Endocrinology, Mechanical Signaling in Bone (2014)
University of North Carolina, Chapel Hill, NC
Mentor: Janet Rubin, MD

Postdoctoral Fellowship Biological Sciences (2011)
University of Delaware, Newark, DE
Mentor: Catherine B. Kirn-Safran, PhD

Doctor of Philosophy Biomechanics and Movement Science (2011) – 3.96 GPA
Emphasis in Molecular Biology and Genetics
University of Delaware, Newark, DE
Mentor: Mary C. Farach-Carson, PhD

Doctor of Physical Therapy Physical Therapy (2007) – 3.95 GPA
University of Delaware, Newark, DE
Mentor: Stuart Binder-Macleod, PT, PhD, FAPTA

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
Mentor: Michael T. Crow, PhD

ACADEMIC APPOINTMENTS

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
2017 – Present	Director – Mechanobiology Core Facility, Indiana Center for Musculoskeletal Health, Indiana University, Indianapolis, IN
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

CLINICAL POSITIONS

2014 – Present	Physical Therapist, Indiana University Methodist Hospital, Indianapolis, IN 46202
2007 – Present	Physical Therapist, Bayhealth Kent General Hospital, Dover, DE 19901
2012 – 2014	Physical Therapist, Central Carolina Hospital, Sanford, NC 27237
2011 – 2014	Physical Therapist, University of North Carolina Hospitals, Chapel Hill, NC 27514
2007 – 2009	Physical Therapist and Clinical Instructor, University of Delaware Neurological and Older Adult Clinic, Newark, DE 19716

PROFESSIONAL LICENSES AND CERTIFICATIONS

2014 – Present	Indiana State Physical Therapy License:	05011609A
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2011 – Present	North Carolina State Physical Therapy License:	13293
2007 – Present	Delaware State Physical Therapy License:	J1-0002198
2007 – Present	American Physical Therapy Association Credentialed Clinical Instructor	

PROFESSIONAL ORGANIZATION MEMBERSHIPS

2019 – Present	Orthopaedic Research Society
2017 – Present	Indiana Center for Musculoskeletal Health
2016 – Present	Cancer and Bone Society
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
2014 – Present	Indiana Physical Therapy Association
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
2010 – 2011	American Society of Biomechanics

HONORS AND AWARDS

Research

2020	ICMH Paper of the Year , Indiana University – Indiana Center for Musculoskeletal Health – <i>“Mechanical Suppression of Breast Cancer Cell Invasion and Paracrine Signaling 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 and Rehabilitation Sciences
2017	John Haddad Young Investigator Award , Advances in Mineral Metabolism – American Society of Bone and Mineral Research
2015	Excellence in Emerging Research and Scholarship Award , Indiana University – School of Health and Rehabilitation Sciences
2015	Young Investigator Travel Award , American Society of Bone and Mineral Research
2015	Alice L. Jee Young Investigator Award , Orthopedic Research Society’s 45 th 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 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 **2nd Place Research Presentation**, Tennessee Academy of Science
Symposium
- 2000 **Excellence in Writing and Composition Award**, Lee University

PROFESSIONAL DEVELOPMENT

- 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, Thurs 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

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)
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Department of Mechanical Engineering, Boise State University

ME 602	Mechanobiology	3 credit hour (lecture)
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TEACHING CONTRIBUTIONS BY COURSE AND SEMESTER

Course	Short Title	Role	Term	Enrollment	Student Evaluation
PHYT622	Anatomy	Guest Lecture	Su 08	35	N/A
PHYT604	Biomech	Guest Lecture	Fa 08	35	N/A
PHYT622	Anatomy	Guest Lecture	Su 09	34	N/A
PHYT604	Biomech	Guest Lecture	Fa 09	34	N/A
PHYT622	Anatomy	Guest Lecture	Su 10	35	N/A
PHYT604	Biomech	Guest Lecture	Fa 10	35	N/A
PHYT622	Anatomy	Guest Lecture	Su 11	35	N/A
PHYT604	Biomech	Guest Lecture	Fa 11	35	N/A
PHYT622	Anatomy	Guest Lecture	Su 12	35	N/A
PHYT604	Biomech	Guest Lecture	Fa 12	35	N/A

PHYT622	Anatomy	Guest Lecture	Su 13	38	N/A
PHYT604	Biomech	Guest Lecture	Fa 13	38	N/A
PHYT622	Anatomy	Guest Lecture	Su 14	36	N/A
P526	Ex & Int II	Instructor	Sp 15	37	4.60
PHYT622	Anatomy	Guest Lecture	Su 15	80	N/A
P515	Ex & Int I	Instructor	Fa 15	40	4.30
P661	Pros & Os	Course Director	Fa 15	40	4.20
P526	Ex & Int II	Instructor	Sp 16	39	4.40
PHYT622	Anatomy	Guest Lecture	Su 16	80	N/A
P515	Ex & Int I	Instructor	Fa 16	40	4.60
P501	Rounds I	Course Director	Fa 16	40	4.57
P601	Rounds II	Course Director	Fa 16	43	4.40
P701	Rounds III	Course Director	Fa 16	39	4.45
P661	Pros & Os	Course Director	Fa 16	39	4.52
P526	Ex & Int II	Instructor	Sp 17	39	4.66
P501	Rounds I	Course Director	Sp 17	41	4.36
P601	Rounds II	Course Director	Sp 17	40	4.36
PHYT622	Anatomy	Guest Lecture	Su 17	80	N/A
P501	Rounds I	Course Director	Fa 17	40	4.48
P601	Rounds II	Course Director	Fa 17	42	4.48
P701	Rounds III	Course Director	Fa 17	39	4.48
P515	Ex & Int I	Instructor	Fa 17	40	N/A
P661	Pros & Os	Course Director	Fa 17	39	4.32
P526	Ex & Int II	Instructor	Sp 18	42	4.32
P501	Rounds I	Course Director	Sp 18	42	4.61
P601	Rounds II	Course Director	Sp 18	40	4.61
G819	Bone Biol	Lecturer	Sp 18	25	N/A
PHYT622	Anatomy	Guest Lecture	Su 18	80	N/A
P501	Rounds I	Course Director	Fa 18	42	4.68
P601	Rounds II	Course Director	Fa 18	39	4.64
P701	Rounds III	Course Director	Fa 18	42	4.65
P515	Ex & Asses I	Instructor	Fa 18	42	N/A
P661	Pros & Os	Course Director	Fa 18	42	4.46
P526	Ex & Int II	Instructor	Sp 19	42	4.59
P501	Rounds I	Course Director	Sp 19	42	4.75
P601	Rounds II	Course Director	Sp 19	39	4.48
ME602	Mechanobio	Guest Lecture	Fa 19	7	N/A
P501	Rounds I	Course Director	Fa 19	43	4.60
P601	Rounds II	Course Director	Fa 19	42	4.60
P701	Rounds III	Course Director	Fa 19	39	4.60
P661	Pros & Os	Course Director	Fa 19	39	4.46
P501	Rounds I	Course Director	Sp 20	42	
P601	Rounds II	Course Director	Sp 20	39	
G819	Bone Biol	Lecturer	Sp 20	25	N/A
G801	NeuroMusc	Lecturer	Su 20	12	N/A

MENTORING

Undergraduate Student Research Mentorships

2020 – Present	Abigail Burge , Life-Health Sciences Internship Program Project:
2020 – Present	Adnie Wilson , Life-Health Sciences Internship Program Project:
2017 – Present	Molly Pederson , Life-Health Sciences Internship Program Department of Forensic & Investigative Science (BS) and Chemistry (BA) Project: <i>Point Mutations Affecting Binding of Cacna2d1 and Perlecan</i>
2017 – 2019	Brandon Chenoweth , Independent Study Project: <i>$\alpha_2\delta_1$ Voltage Sensitive Calcium Channel in Bone Development</i>
2017 – 2018	Jovana Dodevska , Center for Research and Learning RISE Scholar Department of Biomedical Engineering - IUPUI Project: <i>Effect of Low Magnitude Mechanical Signals on Prostate Cancer</i>
2015 – 2016	Phillip Witcher , Mutidisciplinary Undergrad Research Institute Award Department of Biochemistry - IUPUI Co-advisor: Alexander G. Robling, PhD Project: <i>Genetic and pharmacological regulation of bone metabolism</i>
2015 – 2016	Susan Mertz , Mutidisciplinary Undergrad Research Institute Award Department of Neuroscience - IUPUI Co-advisor: Alexander G. Robling, PhD Project: <i>Mechanical activation of mTORC2 in mesenchymal stem cells</i>
2015 – 2016	Noor Assaf , Mutidisciplinary Undergrad Research Institute Award Department of Biomedical Engineering - IUPUI Co-advisor: Alexander G. Robling, PhD Project: <i>Genetic and pharmacological regulation of bone metabolism</i>
2015 – 2016	Joowon Lee , Mutidisciplinary Undergrad Research Institute Award Department of Biology - IUPUI Co-advisor: Alexander G. Robling, PhD Project: <i>Genetic and pharmacological regulation of bone metabolism</i>
2015 – 2016	Jaskaran Singh , Mutidisciplinary Undergrad Research Institute Award Department of Biology - IUPUI Co-advisor: Alexander G. Robling, PhD Project: <i>Genetic and pharmacological regulation of bone metabolism</i>
2015 – 2016	Reuben Jacobs , Life-Health Sciences Internship Program and Undergraduate Research Opportunities Program Department of Biomedical Engineering - IUPUI Project: <i>Role of perlecan in osteocyte cell death</i>
2012 – 2014	Kaitlin Brobst , Independent Study

- Department of Biology – University of North Carolina
 Project: *Generation of a novel MSC-derived osteocyte cell model*
- 2006 – 2009 **Amber Majid**, Independent Study – Senior Honors Thesis
 Department of Biology – University of Delaware
 Project: *Association of the $\alpha_2\delta_1$ auxiliary subunit with the T-type $Ca_v3.2$ subunit in osteocytes*
- 2006 **Andrew Thomson**, Independent Study
 Department of Biology – University of Delaware
 Project: *3D modeling of interactions between perlecan and ECM motifs*

DPT Student Research Mentorships

- 2017 – 2019 **Aaron Gegg**, Independent Study
 Department of Physical Therapy – IUPUI
 Project: *Regulation of bone formation by the auxiliary $\alpha_2\delta_1$ VSCC subunit*
- 2017 – 2019 **Taylor Gorrell**, Independent Study
 Department of Physical Therapy – IUPUI
 Project: *Regulation of bone formation by the auxiliary $\alpha_2\delta_1$ VSCC subunit*
- 2015 – 2017 **R. Alex Bahney**, Independent Study
 Department of Physical Therapy – IUPUI
 Project: *Role of perlecan in fracture healing*
- 2015 – 2016 **Kevin Herald**, Independent Study
 Department of Physical Therapy – IUPUI
 Project: *Role of perlecan in fracture healing*

Graduate & Professional Student Research Mentorships

- 2020 – Present **Connor J. Cunningham**, Biomedical Sciences Master’s Thesis
 College of Osteopathic Medicine, Marian University (MS student)
 Project: *Effects of Myosin Motors on MSC Function*
- 2020 – Present **Jennifer Coulombe**, Mechanical Engineering PhD Student
 University of Colorado Boulder, Interdisciplinary Quantitative Biology
 Project: *Age-dependent changes in matrix/channel mediated osteocyte mechanosensation*
 Funding: *Orthopedic Research Society Collaborative Exchange Grant, NIH T32*
- 2018 – 2020 **Katelyn Semon**, Biomedical Sciences Master’s Thesis
 College of Osteopathic Medicine, Marian University (MS student)
 Project: *Regulation of the $\alpha_2\delta_1$ VSCC subunit in MSC Lineage Fate*
- 2018 – 2019 **Joseph H. Suchomski**, Biomedical Sciences Master’s Thesis
 College of Osteopathic Medicine, Marian University (MS student)
 Project: *Mechanical Activation of VSCCs in vivo*
- 2018 – 2019 **Artur Schneider**, Independent Study
 College of Osteopathic Medicine, Marian University (MS student)

- Project: *Regulation of Osteocyte Mechanotransduction by the $\alpha_2\delta_1$ VSCC subunit*
- 2018 **Reid Liggett**, Independent Study
College of Osteopathic Medicine, Marian University (DO student)
Project: *Production of bone organoids using 3D bioprinting of MSCs*
- 2018 **Ahmed Baghdady**, Independent Study
College of Osteopathic Medicine, Marian University (DO student)
Project: *The Function of the $\alpha_2\delta_1$ VSCC subunit in MSC Lineage Fate*
- 2018 **Jacob Sieger**, Independent Study
College of Osteopathic Medicine, Marian University (DO student)
Project: *The Function of the $\alpha_2\delta_1$ VSCC subunit in MSC Lineage Fate*
- 2017 – 2018 **Karan Sharma**, Independent Study
College of Osteopathic Medicine, Marian University (DO student)
Project: *Influence of the $\alpha_2\delta_1$ VSCC subunit on Bone Development*
- 2017 – 2018 **Madison Kelly**, Biomedical Sciences Master's Thesis
College of Osteopathic Medicine, Marian University (MS student)
Project: *Influence of the $\alpha_2\delta_1$ VSCC subunit on Skeletal Formation, Structure, and Mechanical Adaptation*

Graduate Research Committees

- 2020 – Present **Jennifer Shutter**, Doctoral Advisory Committee
Department of Anatomy, Cell Biology, & Physiology
School of Medicine, Indiana University
Advisor: Uma Sankar
Role: Committee Member
- 2020 – Present **Jennifer Coulombe**, Doctoral Advisory Committee
Department of Mechanical Engineering, University of CO, Boulder
Advisor: Virginia Ferguson
Role: Committee Member
- 2018 – Present **Roy Byungjun Choi**, Doctoral Advisory Committee
School of Medicine, Indiana University
Advisor: Alexander Robling
Role: Committee Member
- 2017 – Present **Megan Noonan**, Doctoral Advisory Committee
School of Medicine, Indiana University
Advisor: Kenneth White
Role: Committee Member
- 2018 – 2020 **Katelyn Semon**, Graduate Thesis Committee
College of Osteopathic Medicine, Marian University

Project: *Regulation of the $\alpha_2\delta_1$ VSCC subunit in MSC Lineage Fate*
Advisor: William Thompson
Role: Advisor/Committee Chair

2019 **Aaron Mahoney**, Graduate Thesis Committee
College of Osteopathic Medicine, Marian University
Project: *Effect of Mechanical Strain on Fibroblasts*
Advisor: Jonathan Lowery
Role: Committee Member

2018 – 2019 **Joseph H. Suchomski**, Graduate Thesis Committee
College of Osteopathic Medicine, Marian University
Project: *Mechanical Activation of VSCCs in vivo in Response to Mechanical Load*
Advisor: William Thompson
Role: Advisor/Committee Chair

2017 – 2018 **Madison Kelly**, Graduate Thesis Committee
College of Osteopathic Medicine, Marian University
Project: *Influence of the $\alpha_2\delta_1$ VSCC subunit on Skeletal Formation, Structure, and Mechanical Adaptation*
Advisor: William Thompson
Role: Advisor/Committee Chair

Postdoctoral Fellow Research Mentorships

2020 – Present **Perla Reyes-Fernandez**, Postdoctoral Fellow
Department of Physical Therapy - IUPUI
Project: *Function of Matrix-Channel Tethering in Bone & Muscle*

2017 – Present **Christian Wright**, Postdoctoral Fellow
Department of Physical Therapy - IUPUI
Project: *Skeletal Consequences of $\alpha_2\delta_1$ Deletion*
Funding: *NIH (NIAMS) NRSA (F32)*

2017 – 2020 **Gabriel Pagnotti**, Postdoctoral Fellow
Co-Mentor with Dr. Theresa Guise
Department of Medicine - IUPUI
Project: *Effects of Low Magnitude Mechanical Forces on Muscle and Bone Loss Due Breast Cancer and Related Therapies*

CURRICULUM/COURSE DEVELOPMENT

Course Design and Development

SHRS P501	Case Series Rounds I	Lecture	1 credit hour
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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

Pending Research Grants

- 2020 – 2022 **Generation of a Novel Mouse 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: 09/01/20 – 08/31/22
Amount: \$10,000
- 2021 – 2026 **Effect of Low Magnitude Mechanical Signals on Bone and Muscle Loss due to Androgen Deprivation Therapy for Prostate Cancer**
Role: Principal Investigator, Multi-PI: Theresa Guise, Clinton Rubin
Agency: NIH (NCI), Adverse Sequelae
Impact Score (A0): TBD, Percentile: N/A
Grant #: 1R01CA262133-01, Dates: 07/01/21 – 06/30/26
Amount: \$4,038,001 (\$1,582,258 allocated to Thompson)
- 2021 – 2026 **Regulation of Signaling between Breast Cancer Cells and Bone by Low Magnitude Mechanical Forces**
Role: Principal Investigator
Agency: Department of Defense, Breast Cancer Research Program – Expansion Award
Overall Score (1=highest merit, 5=lowest merit): TBD
Grant #: BC201632, Dates: 07/01/21 – 06/30/24
Amount: \$746,372

Active Research Grants

- 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
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
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, Dates: 2020

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
- 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: TBD
Amount: \$148,898
- 2018 – 2023 **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 – 06/30/23
Amount: \$2,854,673
- 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)
- 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)

Completed Research Grants

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: 18, i10-index: 28, total citations: 1,502 (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. [IF: 1.510]

2. **Thompson WR**, Majid AS, Czymbek 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 and Min Res.* 2011;26(9):2125-2139. [IF: 6.373]
3. **Thompson WR**, Modla S, Grindel BJ, Czymbek 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. *J Bone & Min Res.* 2011;26(3):618-629. [IF: 6.373]
 - *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. [No IF]
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. [IF: 3.456]
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. [IF: 4.461]
7. **Thompson WR**, Rubin CT, Rubin J. Mechanical regulation of signaling pathways in bone. *Gene.* 2012;503(2):179-193. [IF: 2.196]
8. 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. [IF: 3.730]
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. [IF: 2.496]
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. [IF: 7.133]
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. [IF: 6.832]
 - *Highlighted in “Mesenchymal Cell News”, 5.26 July 9, 2013

12. 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. [IF: 6.832]
13. 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. [IF: 3.234]
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. [IF: 3.973]
15. **Thompson WR**, Yen S, Rubin J. Vibration Therapy: Clinical Applications in Bone. *Curr Opin in Endocrinol Diabetes Obes.* 2014;21(6):447-53. [IF: 3.367]
*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. 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. [IF: 1.395]
17. 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. [IF: 5.902]
18. 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. [IF: 3.549]
19. **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. [no IF]
20. **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. [IF: 5.228]
21. 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. [4.159]
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. [IF: 5.902]

23. **Thompson WR**, Scott A, Loghmani MT, Ward SR, Warden SJ. Understanding Mechanobiology enabling Physical Therapy to be a Force in Mechanotherapy. *Phys Ther.* 2016;96(4):560-9. [IF: 2.799]
*Selected by *The Faculty of 1000*, placing the manuscript in the top 2% of published articles in biology and 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. [IF: 5.902]
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. [IF: 2.890]
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. [IF: 6.724]
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. [IF: 2.825]
28. Warden SJ, Weatherholt AM, **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. [IF: 3.445]
29. **Thompson WR**, Yen S, Uzer G, Xie Z, Sen B, Styner M, Burridge K, Rubin J. LARG GEF and ARHGAP18 orchestrate RhoA activity to control mesenchymal stem cell lineage. *Bone.* 2018;107:172-180. [IF: 4.140]
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. [IF: 6.284]
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. [IF: 3.275]
32. Gurumurthy C, O'Brien AR, Quadros RM, Adams JJ, Pilar A, 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, Larochelle 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. Reproducibility of CRISPR-Cas9 Methods for Generation of Conditional Mouse Alleles: a Multi-Center Evaluation. *Genome Biology*. 2019;20(171):1-14. [IF: 14.028]

Pre-Print: <https://www.biorxiv.org/content/early/2018/09/01/393231>.

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. [IF: TBD].
34. Anloague A, Mahoney A, Ogunbekun O, **Thompson WR**, Larsen B, Hum JM, Lowery JW. *In vitro* Mimicking of Therapeutic Soft Tissue Stimulation Regulates Pro-Inflammatory Cytokines. *Submitted to 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 Requires Nucleo-Cytoskeletal Connectivity. *Bone Research*. 2020;8(40). [IF: 11.508] Preprint: <https://www.biorxiv.org/content/10.1101/838359v1>
*Selected as the 2020 Indiana Center for Musculoskeletal Health "Paper of the Year"
36. Wright CS, Robling AG, Farach-Carson MC, **Thompson WR**. Skeletal Functions of Voltage Sensitive Calcium Channels. *Current Osteoporosis Reports*. *In Press*. [IF: 4.156]

Peer-Reviewed Manuscripts – Under Review

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. *Submitted to Journal of Bone and Mineral Research* [IF: 5.711]
38. Mével E, Li Y, Dadwal UC, Davidson RK, Huls A, **Thompson WR**, Wagner DR, Allen MR, Burr DB, Sankar U. CaMKK2 Inhibition Prevents Post-Traumatic Osteoarthritis. *Submitted to Osteoarthritis and Cartilage* [IF: 5.454]
39. *Kronbergs A, ***Thompson WR**, Shao Y, Burr DB, 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.

*Authors provided equal contribution.

40. 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: 5.711]
41. Ballinger TJ, **Thompson WR**, Guise TA. The Bone-Muscle Connection in Breast Cancer: Implications and Therapeutic Strategies to Preserve Musculoskeletal Health. *Submitted to Cancer Research* [IF: 9.130]

Peer-Reviewed Manuscripts – In Preparation

42. 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.
43. Prideaux M, Wright CS, Yi X, Noonan M, Clinkenbeard E, Mével E, Sankar U, White K, Atkins G, **Thompson WR**. Generation of two Novel Mesenchymal Progenitor Cell Lines Recapitulate Multipotential Lineages.
44. Noonan ML, Ni P, Agoro R, Chu X, Wang Y, Clinkenbeard EL, Liu S, Wan J, Liu Y, **Thompson WR**, White KE. Osteocyte EglN1 Links Oxygen Sensing with FGF23 Production.
45. Rust K, Bonewald L, Farach-Carson MC, **Thompson WR**. Osteocytes and the Matrix they Inhabit.
46. Semon K, Wright CS, Warden SJ, **Thompson WR**. Musculoskeletal Complications of Gabapentin: Implications for Physical Rehabilitation.
47. Edwards DF, Quintana-Martinez A, Lally J, Wright CS, **Thompson WR**, Clinkenbeard EL. Differential Iron Requirements for Osteoblast and Adipocyte Differentiation.
48. Tippen SP, Noonan ML, Ni P, Metzger CE, Swallow EA, Sacks SA, Chen NX, **Thompson WR**, Moe SM, Allen MR, White KE. Age and Sex Effects on FGF23-Mediated Response to Mild Phosphate Challenge.

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, *Graduate Student, or #Postdoc)*

1. Wright CS[#], Semon S^{*}, 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.
2. Semon S, 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.
3. Wright CS[#], Yi X, Semon S, 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, 2020.
**Charles Turner Award awarded to Christian Wright
4. Wright CS[#], Yi X, Semon S, 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.
5. 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.
6. 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.

7. 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.
8. Noonan ML, Clinkenbeard EL, Ni P, Tippen SP, **Thompson WR**, Allen MR, White KE. EPO and HIF-PHD_i in treating CKD-related anemia and control of circulating FGF23. *ASBMR 41st Annual Meeting*, Orlando, FL 2019.
9. 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.
10. 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.
11. **Thompson WR**. Mechanical Control of MSC Fate: The Role of the Actin Cytoskeleton. *6th Annual Symposium on Regenerative Rehabilitation*, Pittsburgh, PA, 2017.
12. 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.
13. **Thompson WR**. Mechanical Regulation of MSC Differentiation through mTORC2/Cytoskeletal Signaling. *ASBMR-Advances in Mineral Metabolism Meeting*. Snow Mass, CO, 2017.
14. 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.
15. **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.
16. **Thompson WR**. Sclerostin is Mechanically and Hormonally Regulated in a Novel *in vitro* Osteocyte Model. *12th International Bone Fluid Flow Workshop*. Houston, TX, 2014.

17. 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.
18. 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.
19. 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.
20. 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. *96th Annual Endocrine Society Meeting*, Chicago, IL, 2014.
21. **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.
22. **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.
23. **Thompson WR**. T-Type Voltage Sensitive Calcium Channels: A Regulatory Role in Osteocyte Mechanotransduction? *10th International Bone Fluid Flow Conference*, Hershey, PA, 2009.
24. **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)

25. Clinkenbeard EL, Edwards DF, Wright CS, **Thompson WR**. Differential Iron Requirements for Osteoblast and Adipocyte Differentiation from Progenitor Cells. *ASBMR 42nd Annual Meeting*, Seattle, WA 2020.
26. Semon S, 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.

27. 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.
28. 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.
29. 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.
30. Wu D, **Thompson WR**, Farach-Carson MC. Morphological and Molecular Equivalence of Osteocytes in Biomimetic Hydrogels. *ASBMR 41st Annual Meeting*, Orlando, FL 2019.
31. 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.
32. 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.
33. 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.
34. 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.
35. 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.
36. 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.

37. 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.
38. 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.
39. 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.
40. 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.
41. 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.
42. 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.
43. 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.
44. 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.
45. **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.
46. 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.

47. 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.
48. 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.
49. 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.
50. **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.
51. **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.
52. 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.
53. **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.
54. 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.
55. **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.
56. **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.

57. **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.
58. **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.
59. **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.
60. **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.
61. 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.
62. 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.
63. 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.
64. **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”**
65. 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”**
66. 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.

67. **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.
68. 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.
69. 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.
70. 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.
71. **Thompson WR**, Majid AS, Czymmek KJ, Ruff AL, Garcia 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**
72. **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"**
73. 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.
74. **Thompson WR**, Majid AS, Czymmek KJ, Modla S, Garcia 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.
75. 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.
76. 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.
77. **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.

78. **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.
79. **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.
80. **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.
81. 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.
82. **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.
83. **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.
84. **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)

85. Osteocyte Mechanotransduction: Matrix to Membrane Tethering. *University of California at Davis, School of Veterinary Medicine*, Davis, CA, Jun 2020.
86. Mechanobiology of Bone: Osteoprogenitors to Osteocytes. *Marian University, Program in Biomedical Sciences*, Indianapolis, IN, Oct 2018.
87. Osteocyte Mechanotransduction: Matrix to the Membrane. *Washington University in St. Louis, Program in Physical Therapy*, St. Louis, MO, Oct 2018.

88. 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
89. Mechanical Regulation of Bone Cells. *University of the Sciences, Department of Physical Therapy*, Philadelphia, PA, Nov 2017.
90. Mechanical Control of MSC Fate: The Role of the Actin Cytoskeleton. 6th Annual Symposium on Regenerative Rehabilitation, Pittsburgh, PA, Nov 2017.
91. Response of Cancer Cells to Mechanical Force. *Department of Biomedical Engineering, Indiana University-Purdue University Indianapolis*, Indianapolis, IN, Oct 2017.
92. Low Magnitude Mechanical Forces: Preserving Musculoskeletal Competence and Restricting Cancer Progression. *IU Tumor Microenvironment & Metastasis Meeting*, Indianapolis, IN, Oct 2015.
93. Mechanical Signaling in Bone Marrow Stem Cells. *Eli Lilly and Company*, Indianapolis, IN, Jan 2015.
94. Sclerostin is Mechanically and Hormonally Regulated in a Novel *in vitro* Osteocyte Model. *University of North Carolina, Department of Medicine*, May 2014.
95. Physical Activity Promotes Bone Strength from the MSC to the Osteocyte. *Indiana University, Department of Physical Therapy*, Jan 2014.
96. PPAR β/δ Governs Wnt Signaling and Bone Turnover, *University of North Carolina, School of Medicine, Division of Endocrinology Grand Rounds*, Sept 2013.
97. Return to Community Participation Post Traumatic Brain Injury, *University of North Carolina, Division of Physical Therapy Grand Rounds*, Mar 2013.
98. Intracellular VEGF Regulates the Balance between Osteoblast and Adipocyte Differentiation. *University of North Carolina, School of Medicine, Division of Endocrinology Grand Rounds*, Jan 2013.
99. Mechanical Regulation of Mesenchymal Stem Cell Lineage Commitment. *University of Delaware, Biomechanics and Movement Science Seminar*, Aug 2012.
100. GS α 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.
101. Molecular Biomechanics: Interdisciplinary Methods and Techniques. *University of Delaware, Biomechanics and Movement Science Seminar*, Feb 2011.

SERVICE

Indiana University Service – Department

2014 – Present	Chair , Fundraising Committee, IU Department of Physical Therapy <i>Notable Achievements:</i> <ul style="list-style-type: none">• Developed and Implemented the <u>Annual IU PT Golf Outing</u> to benefit the Foundation for PT and the Zach Gregory Memorial Leadership Scholarship (50/50 split). Net proceeds: \$1,430 (2015); \$3,379 (2016); \$7,720 (2017); \$6,300 (2018). *\$10,050 in committed sponsorship funds for 2019.• Developed and Implemented the <u>Annual IU PT Gala</u>, which enabled the establishment of the Student Professional Development Scholarship. Net proceeds: \$2,397 (2017); \$3,022 (2018); \$5,335 (2019)• Oversee the “Marquette Store” and apparel sales
2014 – Present	Member , Dept. of Physical Therapy Admissions Interview Team
2015 – Present	Faculty Advisor , Dept. of Physical Therapy (12-14 students/year)
2015 – Present	Member , Dept. of Physical Therapy Awards Committee
2016 – Present	Member , Dept. of Physical Therapy Scholarship Committee
2016 – Present	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 – Present	Member , Clinical and Translational Sciences Institute Transgenic Mouse Core Facility Advisory Committee
2017 – Present	Member , Continuing Medical Education Advisory Committee
2017 – Present	Member , Indiana Center for Musculoskeletal Health Mechanobiology & Muscle/Bone Cross-Talk
2018 – Present	Member , Indiana Center for Musculoskeletal Health Mechanobiology Grant Proposal Review Subcommittee
2018 – Present	Co-Director , Indiana Center for Musculoskeletal Health Mechanobiology Core Facility
2018 – Present	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

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 th Annual Symposium on Regenerative Rehabilitation, Pittsburgh, PA
2017	Discussion Leader , Clinical Special Interest Group, 6 th Annual Symposium on Regenerative Rehabilitation, Pittsburgh, PA
2018	Abstract Reviewer , American Society of Bone and Mineral Research Annual Conference, Montreal Canada
2015	<i>Ad hoc Reviewer</i> , Stem Cells
2015	<i>Ad hoc Reviewer</i> , Bone Key
2015	<i>Ad hoc Reviewer</i> , Biochimie
2015	<i>Ad hoc Reviewer</i> , Cell Biology International
2015, 2017	<i>Ad hoc Reviewer</i> , Histology and Histopathology
2015, 2016, 2017	<i>Ad hoc Reviewer</i> , Journal of Orthopedic Research
2016, 2017	<i>Ad hoc Reviewer</i> , Journal of Biomechanics
2016, 2017	<i>Ad hoc Reviewer</i> , Journal of Bone and Mineral Metabolism
2016	<i>Ad hoc Reviewer</i> , Calcified Tissue International
2016	<i>Ad hoc Reviewer</i> , Experimental Cell Research
2016	<i>Ad hoc Reviewer</i> , PLoS One

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

2017 *Ad hoc Reviewer*, Bone

2017 *Ad hoc Reviewer*, Molecular Nutrition and Food Research

2017 *Ad hoc Reviewer*, Scientific Reports

2018 *Ad hoc Reviewer*, Matrix Biology

2019 *Ad hoc Reviewer*, Cell Communication and Signaling