***­­Curriculum vitae***

**Date:**  May 1, 2025

**Name:**  Courtney M. Karner, PhD

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**Place of Birth:** Lincoln, NE

**Education**

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| --- | --- | --- | --- |
| **Year** | **Degree****(Honors)** | **Field of Study****(Thesis advisor for PhDs)** | **Institution** |
| 2004 | B.S. | Biology Major Minors in Mathematics, Physics &Chemistry | East Central University |
| 2009 | Ph.D. | Genetics and Developmental Biology (Thomas J Carroll) | University of Texas Southwestern Medical Center |

**Postdoctoral Training**

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| --- | --- | --- | --- |
| **Year(s)** | **Titles** | **Specialty/Discipline****(Lab PI for postdoc research)** | **Institution** |
| 2010-2015 | Postdoctoral Fellow | Orthopaedic Research and Cell Biology (Fanxin Long) | Washington University School of Medicine |

**Honors and Awards**

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| --- | --- | --- |
| Year | Name of Honor/Award | Awarding Organization |
| 1999 | Scholar/Athlete Award | National Football Foundation & College Hall of Fame – Oklahoma Chapter |
| 2001 | All-Academic Honorable Mention | Lone Star Conference |
| 2002 | All-Academic First Team | Lone Star Conference |
| 2003 | All-Academic First Team | Lone Star Conference |
| 2003 | Academic All-American | College Sports Information Directors of America (CoSIDA) |
| 2003 | Frank G. Brooks Award for Excellence in Student Research | Beta Beta Beta - Biological Honor Society |
| 2004 | Scholar Athlete of the Year | Lone Star Conference  |
| 2004 | Top 10 Graduating Senior | East Central University |
| 2010 | Nominata Award | University of Texas Southwestern Medical Center |
| 2011 | Viktor Hamburger Award | Washington University School of Medicine |
| 2011-2014 | F32 Post-doc NRSA Fellowship awarded through NIAMS | NIAMS |
| 2016 | Harold M. Frost Young Investigator Award | American Society for Bone and Mineral Research (ASBMR) |
| 2017 | Joe B. Milam Award | East Central University |
| 2017 | John Haddad Young Investigator Award | Advances in Mineral Metabolism (AIMM) and ASBMR |

**Faculty Academic Appointments**

|  |  |  |  |
| --- | --- | --- | --- |
| **Year(s)** | **Academic Title** | **Department** | **Academic Institution** |
| **09/2015-04/2020** | **Assistant Professor** | **Orthopaedic Surgery &****Cell Biology (Joint Appointment)** | **Duke University** |
| 2015-2020 | Member | Cell and Molecular Biology (CMB) Graduate Program | Duke University |
| 2015-2020 | Member | Development and Stem Cell Biology (DSCB) Graduate Program | Duke University |
| 2015-2020 | Member | University Program in Genetics and Genomics (UPGG)  | Duke University |
| **05/2020-10/2020** | **Associate Professor** | **Orthopaedic Surgery &****Cell Biology (Joint Appointment)** | **Duke University** |
| **11/2020-2023** | **Associate Professor** | **Internal Medicine** | **University of Texas Southwestern Medical Center** |
| 2020-Present | Member | Genes, Development and Disease (GDD) Graduate Program | University of Texas Southwestern Medical Center |
| **11/2020-Present** | **Lawrence G. Raisz Professorship in Bone Cell Research** | **Charles and Jane Pak Center for Mineral Metabolism and Clinical Research** | **University of Texas Southwestern Medical Center** |
| **2023-Present** | **Associate Professor (with tenure)** | **Internal Medicine**  | **University of Texas Southwestern Medical Center** |

**Committee Service (***Member, unless noted otherwise)*

|  |  |  |
| --- | --- | --- |
| **Year(s)** | **Name of Committee** | **Institution/Organization** |
| University/Department |
| 2016 | Department of Orthopaedic Surgery Ortho/Engineering Faculty Search Committee | Duke University |
| 2017 | Department of Orthopaedic Surgery Trauma Surgeon Search Committee | Duke University |
| 2017-2020 | Cell and Molecular Biology (CMB) Graduate Admissions Committee | Duke University |
| 2019 | Regeneration Next Initiative (RNI) Postdoctoral Fellowship Committee | Duke University |
| 2022-Present | Propel Mentorship Program, Mentoring Committee for Dr. Robert Tower | University of Texas Southwestern Medical Center |
| 2023-Present | Genetics, Development and Disease (GD&D) Graduate Program Steering Committee | University of Texas Southwestern Medical Center |
| 2023-Present | Faculty Mentoring Committee for Dr. Ruban Dhaliwal  | University of Texas Southwestern Medical Center |
| 2024-Present | Faculty Mentoring Committee for Dr. Jialiang (Shirley) Wang | University of Texas Southwestern Medical Center |
| 2024-Present | Faculty Mentoring Committee for Dr. Yoshiharo Muto | University of Texas Southwestern Medical Center |
| State/Regional |
| 2022 | 2022 Southwest Regional Meeting, Organizing Committee, Member | Society for Development Biology |
| 2023-Present | Bone Disease Program of Texas (BDPT) Council Committee | Lawrence Family - Rare Bone Disease Program of Texas |
| National/International |
| 2022-2025 | VA-CDA2 Career Development Award, Mentoring Committee for Dr. Jessica Hathaway-Schrader | Medical University of South Carolina |
| 2022-Present | OK-INBRE External Advisory Committee | University of Oklahoma Health Sciences Center |
| 2022-2025 | Board member | Advances in Mineral Metabolism |
| 2023-2026 | FASEB Publications Committee, ASBMR Representative | Federation of American Societies for Experimental Biology  |
| 2023-2026 | ASBMR Publications Committee – Ex-Officio: ASBMR Representative to the FASEB Publications Committee | American Society for Bone and Mineral Research |
| 2024 | FASEB Generative AI Taskforce | Federation of American Societies for Experimental Biology  |
| 2025 | New Investigator Recognition Awards (NIRA) Committee | Orthopaedic Research Society |

**Professional Societies**

|  |  |
| --- | --- |
| Dates | Society Name, member |
| 2010-Present | Society for Developmental Biology (SDB), member |
| 2012-Present | American Society for Bone and Mineral Research (ASBMR), member |
| 2015-2017 | American Society for Biochemistry and Molecular Biology (ASBMB), member |
| 2015-Present | Orthopaedic Research Society (ORS), member |
| 2017-Present | Advances in Mineral Metabolism (AIMM), member |
| 2025-Present | Endocrine Society, member |

**Community Engagement**

|  |  |  |
| --- | --- | --- |
| Year(s) | Role, Brief Description | Organization or Institution |
| 2017 | Hosted Cliff Rosen (Maine Medical Center), Seminar Speaker | Orthopaedic Surgery - Duke University  |
| 2018 | Hosted Andre Van Wijnen (Mayo Clinic), Seminar Speaker | Orthopaedic Surgery - Duke University  |
| 2019 | Hosted Thomas J Clements (Johns Hopkins), Seminar Speaker | Orthopaedic Surgery - Duke University  |
| 2019 | Hosted Deneen Wellik (University of Michigan), Seminar Speaker | Development and Stem Cell Biology (DSCB) Program - Duke University |
| 2020 | Hosted Noriaki Ono (University of Michigan), Seminar Speaker | Development and Stem Cell Biology (DSCB) Program - Duke University |
| 2022 | Hosted Jie Shen (Washington University School of Medicine), Seminar Speaker | Center for Mineral Metabolism and Clinical Research (CMMCR) - UTSW |
| 2023 | Hosted Roman Eliseev (University of Rochester Medical Center), Seminar Speaker | Center for Mineral Metabolism and Clinical Research (CMMCR) - UTSW |
| 2023 | Hosted Jialiang (Shirley) Wang (Harvard), Seminar Speaker | Center for Mineral Metabolism and Clinical Research (CMMCR) – UTSW |
| **Internal (Non-Committee)** |
| 2022-Present | UTSW liaison for the Rare Bone Disease Program of Texas.  | Lawrence Family Rare Bone Disease Program of Texas |
| 2021-Present | Center MicroCT Scanner Faculty Supervisor: Oversight, Maintenance, Records & Training | Center for Mineral Metabolism and Clinical Research (CMMCR) – UTSW |
| 2023 | Judge, GD&D Retreat Posters | GD&D - UTSW |
| **External (Non-Committee)** |
| 2018 | 2018 Annual Meeting - Late-Breaking Basic/Translational Science Topics Session, Session Chair/Moderator | Advances in Mineral Metabolism |
| 2019 | 2019 Annual Meeting - Crosstalk Between Bone and Other Joint Tissues Session, Moderator | Orthopaedic Research Society |
| 2020 | Abstract Reviewer for 2020 Annual Meeting | International Bone Marrow Adiposity Society |
| 2020-Present | Abstract Reviewer for ASBMR Annual Meeting | American Society for Bone and Mineral Research (ASBMR) |
| 2020-Present | Abstract Reviewer for ORS Annual Meeting | Orthopaedic Research Society (ORS) |
| 2021 | 2021 Annual Meeting - Career Development Meet-the-Professor Session – “Career development: Starting your new lab.” | Advances in Mineral Metabolism  |
| 2022 | Abstract Reviewer for 2022 Southwest Regional Meeting  | Society for Development Biology |
| 2022 | 2022 Annual Meeting – Professional Development Meet-the-Professor Session (Building and Managing an Effective Research Team) | American Society for Bone and Mineral Research |
| 2023 | 2023 Annual Meeting – Young Investigator Session, Session Chair | Advances in Mineral Metabolism  |
| 2023 | 2023 Annual Meeting – Basic/Translational Meet-the-Professor Session (Skeletal Cell Metabolism) | American Society for Bone and Mineral Research  |
| 2024-2025 | ASBMR Reviewer Training Track – Mentor to Qiwen Li, West China Hospital of Stomatology, Sichuan University  | American Society for Bone and Mineral Research  |
| 2024 | 2024 Annual Meeting – Young Investigator Session, Session Chair | Advances in Mineral Metabolism  |
| 2024 | 2024 Annual Meeting – Meet-the-Professor/Meet-the-Expert Session - “Do you want to move a lab? A guide to mid-career investigators” | American Society for Bone and Mineral Research  |
| 2025 | 2025 Annual Meeting - “The Art of Grant Writing” Workshop – Provided one-on-one mentoring, Panel discussion participant and reviewed Specific Aims pages and full grant proposals.  | Orthopaedic Research Society (ORS) |
| 2025 | 2025 Annual Meeting – NIRA – Pediatric Orthopaedics and Development NIRA Session, Moderator | Orthopaedic Research Society (ORS) |
| 2025 | 2025 Annual Meeting – Young Investigator Session, Session Chair | Advances in Mineral Metabolism  |
| 2026 | 2026 Gordon Research Conference on Musculoskeletal Biology & Bioengineering – Metabolism across the lifespan - Discussion Leader  | Gordon Research Conference (GRC) |

**Grant Review Activities**

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| --- | --- | --- |
| Year(s) | Name of Review Committee | Organization |
| 2016 | Medical Research Council | United Kingdom |
| 2017 | Translational Research Institute (TRI) | National Aeronautics and Space administration (NASA) |
| 2017 | Czech Science Foundation | Czech Republic |
| 2018 | Human Exploration and Operations (HERO) Mission review Panel | National Aeronautics and Space administration (NASA) |
| 2018 | MEDx Translating Duke Health Pilot Project | Duke University |
| 2020 | Medical Research Council | United Kingdom |
| 2020 | MEDx Biomechanics of Injury or Injury Repair Pilot Project | Duke University |
| 2021 (June) | Skeletal Biology, Structure & Regeneration (SBSR) Study Section - ad hoc reviewer | National Institutes of Health |
| 2021-Present | Rare Bone Disease Program of Texas - Lawrence Award Research Applications  | Baylor College of Medicine, MD Anderson Cancer Center and University of Texas Health Sciences Center (McGovern Medical and Dental Schools) |
| 2022 (Feb)  | Skeletal Biology, Structure & Regeneration (SBSR) Study Section - ad hoc reviewer | National Institutes of Health |
| 2022 | CTSA Translational Pilot Grants Program | UT Southwestern Medical Center |
| 2022 (June) | Skeletal Biology, Development and Disease (SBDD) Study Section - ad hoc reviewer | National Institutes of Health |
| 2024 (Jan) | ERC Advanced Grant 2023 Call, L4 Panel  | European Research Council (ERC) |
| 2024 (March) | Uniformed Services University of the Health Sciences (USUHS) Trauma Panel | US Department of Defense (DoD) |
| 2024 (Oct) | Skeletal Biology, Structure & Regeneration (SBSR) Study Section - ad hoc reviewer | National Institutes of Health |
| 2024 (Dec) | Austrian Science Fund (FWF) | Austria |
| 2025 (June) | Skeletal Biology, Structure & Regeneration (SBSR) Study Section - ad hoc reviewer | National Institutes of Health |

**Editorial Activities**

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| --- | --- |
| Year(s) | Journal Name |
| Editor/Associate Editor |
| 2021 | JoVE Methods Collection on Metabolic Pathways |
| Editorial Board |
| 2018-Present | *Journal of Bone and Mineral Research (JBMR)* |
| 2018-Present | *JBMR-Plus* |
| Ad Hoc Reviewer |
|  | *Advanced Science* |
|  | *Aging Cell* |
|  | *Aging and Disease* |
|  | *American Journal of Pathology* |
|  | *Antioxidants* |
|  | *Apoptosis* |
|  | *Biomaterials* |
|  | *Bone* |
|  | *Bone Reports* |
|  | *Bone Research­­­­* |
|  | *Calcified Tissue International* |
|  | *Cell Reports* |
|  | *Cell Research* |
|  | *Connective Tissue Research* |
|  | *Developmental Dynamics* |
|  | *Developmental Biology* |
|  | *FASEB Journal* |
|  | *Frontiers in Endocrinology* |
|  | *Heliyon* |
|  | *Journal of Biomechanics* |
|  | *Journal of Bone and Mineral Research (JBMR)* |
|  | *JBMR-Plus* |
|  | *Journal of Cellular and Molecular Medicine* |
|  | *Journal of Cellular Biochemistry* |
|  | *Journal of Cellular Physiology* |
|  | *Journal of Clinical Investigation Insight* |
|  | *Journal of Orthopaedic Research* |
|  | *Laboratory Investigation* |
|  | *Life Science Alliance* |
|  | *Metabolism*  |
|  | *Molecular Metabolism* |
|  | *Nature Communications* |
|  | *Nature Metabolism* |
|  | *Nutrients* |
|  | *Organogenesis* |
|  | *Pharmacological Research* |
|  | *Physiological Genomics* |
|  | *Proceedings of the National Academies of Sciences (PNAS)* |
|  | *Public Library of Science (PLoS) – One* |
|  | *Science Advances* |
|  | *Scientific Reports* |
|  | *Science Signaling* |

**Grant Support**

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| --- | --- |
| Present |  |
|  | NIAMS R01-AR076325 |
|  | “The Role of Proline Metabolism During Osteoblast Differentiation and Bone Formation” |
|  | Principal Investigator (20% effort) |
|  | $198,000/yr |
|  | $990,000 (direct costs) - 8/10/2020-07/31/2025 |
|  |  |
|  | NIAMS R01-AR071967 |
|  | “Role of Glutamine Metabolism During Osteoblast Differentiation and Bone Formation” |
|  | Principal Investigator (30% effort) |
|  | $375,257/yr |
|  | $1,871,837 (direct costs) - 04/01/2018-4/30/2029 |
|  |  |
|  | NIAMS R01AR083904 |
|  | “Metabolic regulation of osteoclast differentiation and bone resorption.” |
|  | Principal Investigator (30% effort) |
|  | $358,721/yr (direct costs)  |
|  | $1,793,605 (direct costs) – 02/01/2025-01/31/2030 |
|  |  |
|  | DoD OR220107 |
|  | “Glutamine targeted therapies to prevent traumatic heterotopic ossification.” |
|  | Principal Investigator (5% effort) |
|  | $442,073 (Direct Costs) |
|  | 06/15/2023 – 06/14/2026 |
|  |  |
|  | NIAMS R01-AR083346 |
|  | “Regulation of notochord vacuole biogenesis: investigating its role in spine formation and IVD biology.” |
|  | Co-Investigator (10% effort) (Michel Bagnat PI) |
|  | $61,000/yr (Direct Costs) - 01/16/2024 – 12/31/2029 |
|  |  |
|  | NIAID R01-AI186118 |
|  | “Neutrophil metabolism regulates hematopoiesis after trauma.” |
|  | Co-Investigator (5% effort) (Robert Tower PI) |
|  | 06/01/2024-05/31/2029  |
|  |  |
| Pending |  |
|  | “A Metabolic Biomaterial Approach to Bone Repair in Diabetes Mellitus.” |
|  | Co-Investigator (10% effort) (Treena Arinzeh PI) |
|  | Submitted 06/05/2025 |
|  |  |
|  | “Defining the necessity of cytoplasmic GLN metabolism in physiological and pathological bone formation.”  |
|  | Principle Investigator (20% effort) |
|  | Submitted 06/19/2025 |
|  |  |
|  | “Defining the requirements and regulation of glutathione biosynthesis during kidney development.” |
|  | Co-Investigator (20%) (Tom Carroll PI) |
|  | Submitted 06/19/2025 |
|  |  |
|  | “Pyrophosphate metabolism at the intersection of hematopoiesis and skeletal homeostasis.” |
|  | Co-Investigator (5% effort) (Evan Nair-Gill PI) |
|  | Submitted 06/05/2025 |
|  |  |
|  | “Leveraging Osteoblast function to improve molecularly targeted radiopharmaceuticals treatment of prostrate cancer – a novel approach” |
|  | Co-Investigator (1% effort) (Orhan Oz PI) |
|  | Society of Nuclear Medicine |

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| --- | --- |
| Past | NIAMS F32-AR060674 |
|  | “Elucidating the Relationship Between Notch and WNT Signaling in Bone Formation” |
|  | Principle Investigator (100% effort) |
|  | $48,398 – 2011, $51,326 – 2012, $53,042 – 2013. |
|  | 4/01/2011 – 03/31/2014 |
|  |  |
|  | Endowed Professors’ Collaborative Research Support from the Charles Y.C. Pak Foundation |
|  | “Determining the effect of estrogens on amino acid metabolism and bone formation in osteoblasts.” |
|  | Principal Investigator |
|  | $75,000 |
|  | 11/01/2021-04/30/2023 |
|  |  |
|  | Clinical and Translational Science Award (NCATS 1UL1TR003163) |
|  | “Contribution of bone to lower diabetes risk after lactation ends” |
|  | Co-Investigator (Ramos-Roman PI)  |
|  | $50,000 |
|  | 10/01/2023-04/31/2024 |
|  |  |
|  | NIAMS R21-AR078399 |
|  | “A Metabolic Strategy Utilizing a Zein Scaffold for Bone Repair” |
|  | Co-Investigator (15% effort) (Treena Arinzeh PI) |
|  | $27,097 – 2021. $95,929 – 2022. |
|  | 05/01/2021 – 04/30/2024 |
|  |  |
|  | Cancer & Bone Initiative from the Charles Y.C. Pak Foundation |
|  | “The role of prostate specific membrane antigen in the bone metastatic niche.” |
|  | Co-Principal Investigator (Orhan Oz PI)  |
|  | $125,000 (Direct Costs) - 07/01/2023-12/31/2024 |
|  |  |
|  | Endowed Professors’ Collaborative Research Support from the Charles Y.C. Pak Foundation |
|  | “Evaluation of the ability of a GOT1 inhibitor to stimulate bone formation and inhibit bone resorption.” |
|  | Principal Investigator  |
|  | $125,000 (Direct Costs) - 07/01/2023-12/31/2024 |
|  |  |

**Teaching Activities**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Date | Course Name, Rotation or Session Topic | Role | Number of Instruction Hours | Primary Learner Audience (number) | Department or Organization |
| Medical and Graduate School (UME) Course Instruction, Small Group Instruction, Clinical Supervision |
| Spring 2017  | CBI 702: Cell Biology Grant  | Lecturer | 4hr | Grad Students(10) | Duke University – Cell Biology |
| 2018-2020 | CMB 710: Mechanisms of skeletal biology and disease.  | Lecturer | 9hr/yr | Grad Students(8-12/yr) | Duke University – Cell and Molecular Biology |
| 2021 - Present | GD 5301: Developmental Principles in Regenerative Science and Medicine,  | Lecturer | 2hr/yr | Grad Students (15-20/yr) | UTSW – GD&D Program |
| 2023 - Present | GD 5155: GD&D Qual Exam and Hypothesis Driven Grantsmanship,  | Director | 15hr/yr | Grad students(12-20/yr) | UTSW – GD&D Program |
| Fall 2023 | Responsible Conduct of Research (RCR) – “Science & Society”  | Small Group Leader | 2hr | Grad Students (8) | UTSW Graduate School of Biomedical Sciences |
| 2023 – Present | BSCI 5287 Core Curriculum – Cells Literature Discussion | Small Group Leader | 4hr/yr | Grad Students (7-8/yr) | UTSW Graduate School of Biomedical Sciences |

Mentoring and Advising

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| --- | --- | --- | --- | --- |
| **Date** | **Mentee Name** | **Mentee Level/Program and Institution** | **Role** | **Mentee Outcomes, Current Position** |
| Undergraduates |
| 2015-2017 | Everette Kndusen | Undergraduate/Duke University | Primary mentor and research advisor | Authorship on article published in *Cell Metabolism* in 2017. Currently MD student at Keck School of Medicine of the University of Southern California |
| 2015 | Risigan Logendran | Undergraduate/North Carolina State University | Primary mentor and research advisor  | Excellent summer research student. Currently Laboratory Operations Manager at Tavros Therapeutics.  |
| 2016-2017 | Jonathan Schwartzman  | Undergraduate/Duke University | Primary mentor and research advisor | Currently MD student at the University of Central Florida College of Medicine. |
| 2017 | Joshua Hardage | Undergraduate/East Central University | Primary mentor and research advisor  | Excellent summer research intern. Currently Internal Medicine Resident, University of Oklahoma Health Sciences Center.  |
| 2018 | Nathan Loyd | Undergraduate/East Central University | Primary mentor and research advisor | Summer research intern. Currently DO student at Oklahoma State College of Osteopathic Medicine. |
| 2022 | Aaron Seto | Undergraduate/Brown University | Primary mentor and research advisor  | Summer Undergraduate Research Institute for the Study of Kidney Disease (SURISKD) student. Currently MD student at Brown University. |
| 2022 | Elijah Woodward | Undergraduate/East Central University | Primary mentor and research advisor | SURISKD student. Currently a senior at East Central University. |
| 2023 | Lauren Herrneckar | Undergraduate/East Central University | Primary mentor and research advisor | SURISKD student. Currently a senior at East Central University. |
| 2023 | Anu Aggarwal | Undergraduate/Duke University | Primary mentor and research advisor | Excellent summer research intern. Currently MD student at UTSW Medical Center. |
| 2024 | Jimena Ramirez | Undergraduate/East Central University | Primary mentor and research advisor | SURISKD student. Currently a Junior at East Central University. |
| Graduate Students |
| 2016-2022 | Leyao Shen | Duke DSCB Graduate Program | Primary mentor and research advisor | PhD awarded in 2021, First-author articles published in *Journal of Cell Science* (2021),*eLife* (2022), and *Frontiers in Physiology* (2022). Currently DDS student at Michigan School of Dentistry. |
| 2018 | Dilara Anbarci | Rotation Student - Duke DSCB Graduate Program | Primary mentor | Excellent rotation, joined another lab. |
| 2018 | Belinda Hernandez | Rotation Student - Duke DSCB Graduate Program | Primary mentor | Excellent rotation, joined another lab.  |
| 2023 | Nataliya Tod | Rotation student – UTSW MSTP program | Primary Mentor | Excellent rotation, joined another lab.  |
| 2024 | David Anjakos | Rotation student – UTSW GD&D program | Primary Mentor | Excellent rotation, joined another lab.  |
| 2024-Present | Amy Whitaker | Graduate Student – UTSW GD&D program | Primary Mentor and Research Advisor | PhD candidate (transferred from another lab).  |
| 2025-Present | Katie Rubitschung | Graduate Student – UTSW BME program | Primary Mentor | PhD candidate (transferred from another lab). |
| 2025- Present | Desiree DeHart | Graduate Student – UTSW BME program | Primary Mentor and Research Advisor | 1st year graduate student |
| Postdoctoral Trainees |
| 2017-2020 | Deepika Sharma | Postdoctoral Fellow | Primary Mentor and Research Advisor | First author articles published in *Journal of Cell Science* (2021) and *eLife* (2021)*.* Currently a scientist at KBI Biopharma.  |
| 2018-2025 | Guoli Hu | Postdoctoral Fellow | Primary Mentor and Research Advisor | First author articles published in *Journal of Bone and Mineral Research* (2020), *Scientific Reports* (2021), *JCI Insight* (2023), *Embo Reports* (2024) and *Antioxidants* (2024)*.* Received 2022 Harold M. Frost Award, 2022 ASBMR Young Investigator Award and the 2024 John G. Haddad Young Investigator Award. |
| 2023-2024 | Logan Moore | Postdoctoral Fellow | Primary Mentor and Research Advisor | First author article is in revision at *Journal of Bone and Mineral Research*. Currently Assistant Professor at Texas Wesleyan University. |
| 2024-Present | Danielle Smith | Postdoctoral Fellow | Primary Mentor and Research Advisor | Current Postdoc, submitted proposals for support from NIH F32 and Jane Coffin Childs Memorial Foundation.  |

Learner Assessment Activities or Tool Development

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| --- | --- | --- | --- | --- | --- |
| **Date** | **Course Name or Session Topic** | **Role** | **Number of Evaluation Hours** | **Primary Learner Audience** | **Organization or Institution** |
| Dissertation Committees |
| 2017-2018 | Dissertation Committee | Member | 4-6 hr/yr | Michael Reinsvold | Duke – Biomedical Engineering (BME) M.S. Program |
| 2018-2019 | Dissertation Committee | Member | 4-6hr/yr | Monique Goldsmith | Duke – BME M.S. Program |
| 2016-2020 | Dissertation Committee | Member | 4-6 hr/yr | Jason Long | Duke – DSCB PhD Program |
| 2016-2021 | Dissertation Committee | Member | 4-6 hr/yr | Hongyuan “Hazel” Zhang | Duke – DSCB PhD Program |
| 2021 | Dissertation Committee | International Member | 8 hr | Guillaume Tournaire | Katholieke Universiteit Leuven |
| 2017-2022 | Dissertation Committee | Member | 4-6 hr/yr | Brianna Peskin | Duke – DSCB PhD Program |
| 2020-2022 | Dissertation Committee | Member | 4-6 hr/yr | Apurva Limaye | New Jersey Institute of Technology |
| 2020-2024 | Dissertation Committee | Member | 4-6 hr/yr | Dilara Anbarci | Duke – DSCB PhD Program |
| 2023-Present | Dissertation Committee | Member | 4-6 hr/yr | Harrison Tom | UTSW – Cancer Biology  |
| 2024 | Dissertation Committee | Member | 8 hr | Dona Kavindi Madushani Weerasinghe | Deakin University - Australia |
| Qualifying Exams |
| 2016 | Qualifying Exam Committee | Member | 2 hr | Jason Long  | Duke – DSCB PhD Program |
| 2016  | Qualifying Exam Committee | Member | 2 hr | Hongyuan “Hazel” Zhang | Duke – DSCB PhD Program |
| 2017 | Qualifying Exam Committee | Member | 2 hr | Brianna Peskin | Duke – DSCB PhD Program |
| 2019 | Qualifying Exam Committee | Member | 2 hr | Wendi Guo | Duke – Pharmacology and Cancer Biology (PCB) PhD Program |
| 2020  | Qualifying Exam Committee | Member | 2 hr | Dilara Anbarci | Duke – DSCB PhD Program |
| 2022 | Qualifying Exam Committee | Member | 2 hr | Peter Luo | UTSW GD&D  |
| 2024 | Qualifying Exam Committee | Member | 2 hr | Reagan Adams | UTSW GD&D  |
| 2024 | Qualifying Exam Committee | Silent Observer | 2 hr | Chase Pagani | UTSW GD&D  |
| 2024 | Qualifying Exam Committee | Silent Observer | 2 hr | Margaret Cervantes | UTSW GD&D  |
| 2024 | Qualifying Exam Committee | Silent Observer | 2 hr | Ashley Rowe | UTSW GD&D  |
| 2025 | Qualifying Exam Committee | Silent Observer | 2 hr | Xinyi Zhou | UTSW GD&D  |
| 2025 | Qualifying Exam Committee | Silent Observer | 2 hr | Jason Lucavs | UTSW GD&D  |
| 2025 | Qualifying Exam Committee | Silent Observer | 2 hr | Kwangkyun Park | UTSW GD&D  |
| 2025 | Qualifying Exam Committee | Silent Observer | 2 hr | Sharon Wu | UTSW GD&D  |
| 2025 | Qualifying Exam Committee | Silent Observer | 2 hr | Hanna Guo | UTSW GD&D  |

**Invited Lectures**

|  |  |  |
| --- | --- | --- |
| Year(s) | Title | Location |
| International |
| 10/01/2018 | “Glutamine metabolism is a critical regulator of osteoblast and adipocyte specification in skeletal stem cells.” | Canadian Shriners Hospital for Children and McGill University, Montreal, QC, Canada |
| 09/10/2020 | “Glutamine metabolism provides glutathione necessary for osteoblast differentiation in mice.” | International Bone Marrow Adiposity Society 2020 Annual Meeting, Seattle WA |
| 02/06/2022 | “Interrogating amino acid metabolism in osteoblasts: A new role for proline in bioenergetics” | Orthopaedic Research Society 2022 Annual Meeting, Workshop on Bioenergetics in Bone and Cartilage, Tampa FL |
| 04/09/2022 | “The role of glutamine uptake and metabolism in bone biology.”  | Advances in Mineral Metabolism 2022 Annual Meeting, Session on Cell Bioenergetics and Metabolism, Aspen CO. |
| 09/17/2022 | “To build bone, Runx2 must mind it’s P’s and Q’s.” | Bones and Teeth Gordon Research Seminar Keynote Lecture, Ventura, CA.  |
| 11/10/2022 | “The regulation of bone formation by glutamine metabolism.” | 2022 FOP Drug Development Forum - Unifying FOP and Traumatic Heterotopic Ossification, Science + Families = A Cure, Dallas, TX |
| 10/22/2023 | “(Oxidative) Stress Relief: Glutamine protects RUNX2 to promote osteoblast differentiation.” | Nephrology-Metabolism Symposium, Chang Gung Medical Week 2023, Linkou Chang Gung Memorial Hospital, Taipei City, Taiwan.  |
| 02/05/2024 | “Plant-derived Zein scaffold provides a local source of glutamine for bone repair.” | Orthopaedic Research Society 2024 Annual Meeting, Long Beach CA. |
| 09/26/2024 | “Glutaminolysis provides amino acids and nucleotides to regulate osteoclast differentiation”.  | American Society for Bone and Mineral Research (ASBMR) Annual Meeting Pre-Meeting Symposium on Energy Metabolism in Skeletal Development and Disease, Toronto, Ontario, Canada.  |
| 07/15/2025 | “Metabolic regulation of bone mass.”  | ENDO 25 – the Annual Meeting of the Endocrine Society, San Franscisco CA.  |
| National |
| 02/26/2009 | “Cell interactions and movements during development: the making and shaping of kidney tubules.” | NIH Bridges to the Baccalaureate, East Central University, Ada OK |
| 04/09/2014 | “Wnt induced glutamine metabolism is required for osteoblast differentiation.” | Interdisciplinary Seminar Series, University of Oklahoma Health Sciences Center, Oklahoma City OK |
| 04/19/2017 | “Glutamine metabolism regulates the maintenance and specification of mesenchymal stem cells” | East Carolina Diabetes & Obesity Institute, East Carolina University, Greenville NC |
| 02/05/2019 | “Glutamine metabolism is a critical regulator of osteoblast proliferation, specification and bone formation.” | Department of Molecular Biosciences, University of Texas, Austin TX |
| 02/11/2019 | “Interrogating glutamine metabolism during osteoblast differentiation and bone formation.” | Department of Nutritional Sciences, Oklahoma State University, Stillwater OK |
| 06/03/2019 | “Biphasic regulation of bone formation by glutamine metabolism.” | Department of Orthopaedic Surgery, Washington University School of Medicine, St. Louis MO |
| 08/28/2019 | “Biphasic regulation of bone formation by glutamine metabolism.” | Department of Oral Health Sciences, Medical University of South Carolina, College of Dental Medicine, Charleston SC |
| 09/27/2021 | “Proline metabolism fulfills synthetic and bioenergetic demands in osteoblasts.” | Center for Bone Biology, Vanderbilt University Medical Center, Nashville TN |
| 03/29/2022 | “Proline metabolism fulfills synthetic and bioenergetic demands in osteoblasts.” | Department of Cell and Molecular Biology, St. Jude Children’s Research Hospital, Memphis TN |
| 01/12/2023 | “The role of glutamine uptake and metabolism in bone biology.”  | Tulane Center for Aging, Tulane School of Medicine, New Orleans LA |
| 03/27/2023 | “To build bone, Runx2 must mind it’s P’s and Q’s.” | Department of Biology, Lipscomb University, Nashville, TN |
| 05/01/2023 | “Glutamine metabolism and the control of osteoblast differentiation.” | National O’Brien Centers Kidney Seminars, Hosted by UT Southwestern Medical Center |
| 07/12/2023 | “Metabolic regulation of bone formation: Runx2 minds its P’s and Q’s.” | William F. Neuman Visiting Scientist Seminar Series. Center for Musculoskeletal Research, University of Rochester, Rochester NY |
| 11/08/2023 | “Glutamine metabolism and the control of osteoblast differentiation.” | NIH Matrix Biology Scientific Interest Group, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD |
| 01/22/2024 | “Metabolic control of osteoclast differentiation and bone resorption.” | Department of Biology, Lipscomb University, Nashville, TN |
| 10/04/2024 | “Glutamine metabolism and the regulation of bone mass” | Department of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX |
| 12/06/2024 | “Glutamine metabolism and the regulation of bone mass” | Department of Nutrition Sciences, University of Texas, Austin, TX |
| 09/11/2025 | “Glutamine metabolism and the regulation of bone mass” | Department of Nutritional Sciences, University of Wisconsin – Madison, Madison, WI |
| Regional/Local |
| 06/12/2019 | “Biphasic regulation of bone formation by glutamine metabolism.” | Center for Mineral Metabolism and Clinical Research, University of Texas Southwestern Medical Center, Dallas TX |
| 04/22/2022 | “Metabolic Regulation of Bone Formation.” | Charles Pak Symposium on Mineral Metabolism Research, UT Southwestern Medical Center, Dallas TX |
| 09/16/2022 | “Glutamine metabolism and the control of osteoblast differentiation” | Center for Organogenesis Research and Trauma (CORT), UT Southwestern Medical Center, Dallas TX |
| 02/29/2024 | “Glutamine metabolism underpins osteoclast differentiation and bone resorption”  | Center for Organogenesis Research and Trauma (CORT) 2024 Scientific Retreat, UT Southwestern Medical Center, Dallas TX |

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**Peer-Reviewed Publications**

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**Non-peer reviewed scientific or medical publications/materials in print or other media**

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