

**Spencer W. Barnhill**  
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Current Position

**Paley Orthopedic and Spine Institute: West Palm Beach, FL (2024-Present)**

Orthopaedic Surgeon

Education

**Brigham and Women's Hospital / Harvard Medical School: Boston, MA (2023-2024)**

Orthopaedic Adult Reconstruction Fellowship

**University of Miami / Jackson Memorial Hospital: Miami, FL (2018-2023)**

Orthopaedic Surgery Residency, ABOS Part I: Pass

**Wright State University Boonshoft School of Medicine: Dayton, OH (2014-2018)**

M.D., USMLE Step 1: 261, USMLE Step 2: 265, USMLE Step 3: Pass, Class Rank: 4/108

**Miami University: Oxford, OH (2010-2014)**

B.S. Zoology; B.S. Environmental Science; Magna Cum Laude

Medical Licensure

Florida State Medical Board License (2024-Present)

Massachusetts State Medical Board License (2023-2024)

NPI# 1881198703

Awards & Memberships

**American Association of Hip and Knee Surgeons (AAHKS)**, Young Arthroplasty Group (2021-Present)

**AO Trauma**, Member (2019-Present)

**Miami Orthopaedic Society**, Member (2019-Present)

**American Academic of Orthopaedic Surgeons (AAOS)**, Member (2018-Present)

**Alpha Omega Alpha (AOA)**, Member, Wright State University Boonshoft School of Medicine (2017-Present)

**Distinguished Scholar Award for Research**, Wright State University Boonshoft School of Medicine (2018)

- One of three students recognized for generating a significant body of scholarly work, working collaboratively with students and faculty, demonstrating leadership in the Research Learning Community, and advancing student research at the Boonshoft School of Medicine.

**Best Clinical Research Poster Presentation at the Medical Student Research Forum** (2017)

Research and Laboratory Experience Summary

**Brigham and Women's Hospital/Harvard Medical School Clinical Research**

- Primary author for clinical research studies
- Reviewer for Journal of Bone and Joint Infections JBJS

**Max Biedermann Institute for Biomechanics Research at Miami Beach** (2019-Present)

- Primary author studying ballistic injuries below the knee, currently investigating reliability of CT scan in determining intraarticular extension of bullet fragments at the ankle.
- \$20,000 private grant received for funding of this research.

**University of Miami/Jackson Memorial Hospital Clinical Research** (2018-2023)

- Primary author on clinical retrospective studies as well as case series and review articles.
- Secondary author on multiple database studies and clinical research studies.

**Dayton VA Medical Center Clinical Research** (2015-2018)

- Investigated patient outcomes related to a fast-track TKA and THA program at the VA of Dayton, OH.

- Performed literature review and data analysis on length-of-stay and post-op complications.

**Wright State University BSOM Clinical Research (2015-2018)**

- Collaborated and co-authored a review article on the hazards of electrosurgical smoke exposure.
- Authored an infectious disease case report for poster presentation and participated yearly in poster competitions.

**Wright State University Vascular Biology Lab (2015-2018)**

- Investigated the roles of specific cytokines in the context of atherosclerosis and vascular pathology.
- Laboratory techniques performed include RNA extraction from cell culture, polymerase chain reaction, and DNA sequencing.

**Jamaica Medical Service Program (2015)**

- Collected patient health data over two weeks as a quality improvement project for future programs.
- Primary author for poster presentation and performed statistical analysis of the patient data.

**Miami University Comparative Physiology Lab (2010-2014)**

- Investigated aspects of cardiac enlargement in two distinct mouse models of exercise and extreme obesity.
- Laboratory techniques included RNA extraction from tissue, polymerase chain reaction, tissue histology, and RNA HiSeq sequencing.

Leadership and Volunteer Service

**Residency Selection Committee, University of Miami / Jackson Memorial Hospital Orthopaedic Residency (2018-Present)**

- Coordinate and participate in all residency recruitment events including Q&A sessions and interview day activities.
- Evaluate rotating medical students and interviewees each year.

**Orthopaedic Surgery Interest Group, Third Year Representative & President, WSU Boonshoft School of Medicine (2016-2018)**

- Collaborate with MS4 students and Orthopedic Surgery residents in planning events and lectures.
- Events include suture labs, cadaver labs, instrument demonstrations, mock procedures, and faculty presentations.

**Anatomy Integration Task Force, Third Year Representative, WSU Boonshoft School of Medicine (2016)**

- One of two MS3 representatives chosen for development of the new integrated Anatomy curriculum.
- Collaborated with WSUBSOM faculty to provide input and ideas for the revised system-based program.

**James. B. Peoples, M.D., Surgical Society President, WSU Boonshoft School of Medicine (2015-2016)**

- Oversee five executive board members and organize all events held by the surgery interest group throughout the school year.
- Events include suture labs, cadaver labs, gown and glove sessions, and faculty presentations.

**Jamaica Medical Service Program, WSU Boonshoft School of Medicine (June 2015)**

- Two-week experience providing medical care to underserved and rural communities of northern Jamaica.
- Team of eight medical students and one faculty member see approximately 600-800 patients in two weeks.
- Primary care and medical management of disease facilitating excellent pre-clinical and global health experiences.

**Eagle Scout Achievement, Boy Scouts of America (2006)**

Bibliography

**Peer-Reviewed Publications**

1. Burns MPA, Reges CR, Barnhill SW, Koehler KN, Lewis BC, Colombo AT, Felter NJ, Schaeffer PJ. Chronic cold exposure causes left ventricular hypertrophy that appears to be physiological. J Exp Biol. 2024 Aug 29;jeb.247476. Epub ahead of print. PMID: 39206582.
2. Constantinescu D, Luxenburg D, Syros A, Bondar KJ, Barnhill SW, Vanden Berge D, Vilella-Hernandez F. Vascular Injury After Knee Dislocation: A Meta-Analysis Update. J Am Acad Orthop Surg. 2023 Feb 15;31(4):e198-e206. PMID: 36730697.
3. Pavlis W, Constantinescu DS, Murgai R, Barnhill SW, Black B. Calcium pyrophosphate dihydrate crystals in a 9-

- year-old with osteomyelitis of the knee: A case report. *World J Orthop.* 2022 Sep 18;13(9):870-875. PMID: 36189334.
4. Constantinescu DS, Lizardi JJ, Weinerman JR, Vandenberg D, Barnhill SW, Hernandez VH. The Most Influential Publications in Outpatient Total Joint Arthroplasty. *Orthop Rev (Pavia).* 2022 Sep 23;14(3):38041. PMID: 36168397.
  5. Costello JP 2nd, Markowitz MI, Luxenburg D, Rizzo MG, Mahmoud RH, Barnhill SW, Vilella-Hernandez FE. Effects of immunocompromised status on diagnostic criteria in septic arthritis. *J Orthop.* 2022 Aug 10;34:80-83. PMID: 36035198
  6. Constantinescu D, Pavlis W, Rizzo M, Vandenberg D, Barnhill SW, Hernandez VH. The role of commercially available smartphone apps and wearable devices in monitoring patients after total knee arthroplasty: a systematic review. *EFORT Open Rev.* 2022 Jul 5;7(7):481-490. PMID: 35900191.
  7. Constantinescu D, Pavlis W, Vandenberg D, Barnhill SW, Geller J, Vilella F. Anterior Prosthetic Knee Dislocation with Acute Vascular Injury: A Case Report. *Annals of Medicine and Surgery.* 2022 Feb. PMID: 35386803.
  8. Desai SS, Dent CS, Hodgens BH, Rizzo MG, Barnhill SW, Allegra PR, Popkin CA, Aiyer AA. Epidemiology and Outcomes of Ankle Injuries in the National Football League. *Orthop J Sports Med.* 2022 Jun 3;10(6):23259671221101056. PMID: 35677018.
  9. Luxenburg D, Bondar K, Cohen L, Constantinescu D, Barnhill SW, Donnally CJ. Return to Golf Following Cervical and Lumbar Spinal Fusion: A Systematic Review. *World Neurosurg.* 2021 Aug 23. PMID: 34438101.
  10. Geller JS, Allegra PR, Seldon CS, Spieler BO, Cohen LL, Barnhill SW, Huntley SR, De La Zerda A, Samuels S, Wang L, Isrow D, Wolfson AH, Yechieli RL. Primary Versus Secondary Radiotherapy for Heterotopic Ossification Prevention About the Elbow. *J Orthop Trauma.* 2022 Feb 1. PMID: 34050084.
  11. Geller JS, Allegra PR, Seldon CS, Spieler BO, Cohen LL, Barnhill SW, Huntley SR, Samuels S, Wang L, Isrow D, Zerda A, Wolfson AH, Hernandez G, Vilella FE, Yechieli RL. Prophylactic Radiotherapy for Prevention of Heterotopic Ossification After Periacetabular Fractures: A Review of Efficacy and Associated Conditions. *J Surg Orthop Adv.* 2022 Summer;31(2):113-118. PMID: 35820098.
  12. Younis M, Barnhill SW, Maguire J, Pretell-Mazzini J. Management of humeral impending or pathological fractures with intramedullary nailing: reaming versus non reaming technique-a retrospective comparative study. *Musculoskelet Surg.* 2020 May 25. PMID: 32451845.
  13. Nigh ED, Emerson CP, To D, Barnhill SW, Rizzo MG, Nguyen DM, Ugarte A, Muñera F, Greif DN, Jose J, Dodds SD. Extensor Tendon Entrapment on Computed Tomography Imaging of Distal Radius Fractures. *J Wrist Surg.* 2020 Apr;9(2):129-135. Epub 2019 Dec 24. PMID: 32257614.
  14. Mahan J, Damodar D, Trapana E, Barnhill SW, Nuno AU, Smyth NA, Aiyer A, Jose J. Achilles tendon complex: The anatomy of its insertional footprint on the calcaneus and clinical implications. *J Orthop.* 2019 Jun 10;17:221-227. PMID: 31889745
  15. Emerson CP, Bernstein JM, Nham F, Barnhill SW, Baraga MG, Bogner E, Jose J. Magnetic resonance imaging of the quadriceps tendon autograft in anterior cruciate ligament reconstruction. *Skeletal Radiol.* 2019 Nov;48(11):1685-1696. Epub 2019 May 16. PMID: 31093713.
  16. Donnally CJ 3rd, Trapana EJ, Barnhill SW, Bondar KJ, Rivera S, Sheu JI, Wang MY. The Most Influential Publications in Odontoid Fracture Management. *World Neurosurg.* 2019 Mar;123:41-48. Epub 2018 Dec 5. PMID: 30528529.
  17. Arumugam P, Carroll KL, Berceli SA, Barnhill SW, Wrenshall LE. Expression of a Functional IL-2 Receptor in Vascular Smooth Muscle Cells. *J Immunol.* 2019 Feb 1;202(3):694-703. Epub 2018 Dec 31. PMID: 30598511.
  18. Kiskaddon EM, Lee JH, Meeks BD, Barnhill SW, Froehle AW, Krishnamurthy A. Hospital Discharge Within 1 Day After Total Joint Arthroplasty From a Veterans Affairs Hospital Does Not Increase Complication and Readmission Rates. *J Arthroplasty.* 2018 May;33(5):1337-1342. Epub 2017 Dec 7. PMID: 29275116.
  19. Bree K, Barnhill SW, Rundell W. The Dangers of Electrosurgical Smoke to Operating Room Personnel: A Review. *Workplace Health Saf.* 2017 Nov;65(11):517-526. Epub 2017 Apr 17. Review. PMID: 28414627.

#### **Manuscripts Submitted for Publication / In Progress**

1. Momtaz D, Barnhill SW. Impact of Bariatric Surgery on Long-term Outcomes of Adult Knee Arthroplasty: A Propensity Matched Analysis with Six Years of Follow-up. Manuscript in progress.

2. Afghanyar Y, Kim E, Barnhill S, Fitz W. Potential Limitations of the CPAK Classification. Manuscript in progress.
3. Barnhill SW, Rubenstein W, Mihalko W, Jamison M, Lange J, Iorio R. Cost-Effectiveness Analysis of a Multi-Offset Hip Stem with One Rasp System. Manuscript in progress.
4. Barnhill SW, Al-Hardan W, Bernstein J, Conway SA. Preserving the Physis in Very Young Patients with Lower Extremity Sarcomas. Submitted.
5. Barnhill SW, Constantinescu D, Al-Barghouthi A, Latta L, Zych G. Efficacy of CT in Determining Intra-Articular Penetration of Lead Bullets. Data collection in Progress.

### **Oral Presentations**

6. Spencer Barnhill MD. Functional Acetabular Positioning in Total Hip Arthroplasty. University of Miami / Jackson Memorial Hospital Orthopaedic Surgery Grand Rounds. April 2023.
7. Spencer Barnhill MD. Revision Total Knee Arthroplasty Using the CORI Robotic System. University of Miami / Jackson Memorial Hospital Orthopaedic Surgery Grand Rounds. December 2022.
8. Spencer Barnhill MD. The Role of Next Generation DNA Sequencing for Orthopaedic Infections. University of Miami / Jackson Memorial Hospital Orthopaedic Surgery Grand Rounds. March 2022.
9. Spencer Barnhill MD, Chester Donnally MD, Ajit Vakharia BS, Rushabh Vakharia MD, Dhanur Damodar MD, Joseph Gjolaj MD. High Altitude is an Independent Risk Factor for Developing Pulmonary Embolism, But Not Deep Vein Thrombosis Following a 1 to 2 Level Posterior Lumbar Fusion. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting. Las Vegas, NV. March 2019.
10. Spencer Barnhill BS, Eric Kiskaddon, MD, Jessica Lee, MD, Brett Meeks, MD, Andrew Froehle, PhD, Anil Krishnamurthy, MBBS. Hospital Discharge Within 1 Day Following Total Joint Arthroplasty in a Veterans Affairs Hospital Does Not Increase Complication and Readmission Rates. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting. New Orleans, LA. March 2018.
11. Spencer Barnhill BS, Prakash Arumugam, PhD, Katie Lee Carroll, BS, Lucile Wrenshall, MD, FACS. Interleukin-2 Promotes Proliferation and Migration in Vascular Smooth Muscle Cells. Society for Vascular Surgery Vascular Research Initiatives Conference, Minneapolis, MN. May 2017.
12. Spencer Barnhill BS, Eric Kiskaddon, MD, Jessica Lee, MD, Brett Meeks, MD, Andrew Froehle, PhD, Anil Krishnamurthy, MBBS. Hospital Discharge Within 1 Day Following Total Joint Arthroplasty in a Veterans Affairs Hospital Does Not Increase Complication and Readmission Rates. WSU Boonshoft School of Medicine Medical Student Research Symposium. April 2018.
13. Spencer Barnhill BS, Eric Kiskaddon, MD, Chris McMellen, BS, Anil Krishnamurthy, MBBS. Bony Metastasis of Transitional Cell Carcinoma of Unknown Origin with Subsequent Ten-Year Survival. Case Report. WSU Boonshoft School of Medicine Medical Student Research Symposium. April 2018.
14. Spencer Barnhill BS, Eric Kiskaddon, MD, Jessica Lee, MD, Brett Meeks, MD, Andrew Froehle, PhD, Anil Krishnamurthy, MBBS. Hospital Discharge Within 1 Day Following Total Joint Arthroplasty in a Veterans Affairs Hospital Does Not Increase Complication and Readmission Rates. Orthopedic Research and Innovation Symposium, Wright State University. April 2017.

### **Poster Presentations:**

15. Spencer Barnhill MD, Nigh ED, Emerson CP, To D, Rizzo MG, Nguyen DM, Ugarte A, Munera F, Greif DN, Jose J, Dodds SD. Extensor Tendon Entrapment on Computed Tomography Imaging of Distal Radius Fractures. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting in Orlando, FL. March 2020. Virtual Meeting.
16. Spencer Barnhill MD, Dustin Massel MD, Chester Donnally MD, Augustus Rush MD, Sebastian Rivera MD, Rushabh Vakharia MD, Ajit Vakharia BS, Frank Eismont MD. An Epidural Steroid Injection in the Six Months Preceding a Lumbar Decompression without Fusion Predisposes Patients to Postoperative Infection. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting. Las Vegas, NV. March 2019.
17. Spencer Barnhill BS, Prakash Arumugam, PhD, Katie Lee Carroll, BS, Lucile Wrenshall, MD, FACS. Interleukin-2 Promotes Proliferation and Migration in Vascular Smooth Muscle Cells. American Heart Association Arteriosclerosis, Thrombosis and Vascular Biology / Peripheral Vascular Disease Conference (AHA ATVB/PVD), Minneapolis, MN. May 2017.

18. Spencer Barnhill BS, Eric Kiskaddon, MD, Jessica Lee, MD, Brett Meeks, MD, Andrew Froehle, PhD, Anil Krishnamurthy, MBBS. Hospital Discharge Within 1 Day Following Total Joint Arthroplasty in a Veterans Affairs Hospital Does Not Increase Complication and Readmission Rates. WSU Boonshoft School of Medicine Medical Student Research Forum. April 2017.
19. Spencer Barnhill BS, Jennifer Hilgeman, MD, Jordan Wright, MD, Ayman El Sheikh, MD, Sherman Alter, MD, Mukund Dole, MD. Pasteurella multocida Central Line Associated Bloodstream Infection (CLABSI) following feline contamination in immunocompromised chemotherapy patient. WSU Boonshoft School of Medicine Medical Student Research Forum. April 2017.
20. Spencer Barnhill BS, Prakash Arumugam, PhD, Lucile Wrenshall, MD, FACS. IL-2 Receptor Expression in Vascular Smooth Muscle Cells in the Context of Atherosclerosis. Central Research Forum, Wright State University. October 2016.
21. Spencer Barnhill BS, Jason Ina, BS, Evan Merle, BS, Thomas Herchline, MD. Prevalence of Disease in Northeastern Rural Jamaica: A Quality Improvement Study. Central Research Forum, Wright State University. October 2015.
22. Spencer Barnhill BS, Paul Schaeffer, PhD. Can cold-induced cardiac activity prevent cardiac pathologies caused by obesity? Experimental Biology National Conference, San Diego, CA. April 2014.
23. Spencer Barnhill BS, Paul Schaeffer, PhD. Can cold-induced cardiac activity prevent cardiac pathologies caused by obesity? Ohio Physiological Society Conference, Wright State University. October 2012.
24. Spencer Barnhill BS, Paul Schaeffer, PhD. Can cold-induced cardiac activity prevent cardiac pathologies caused by obesity? Undergraduate Research Forum, Miami University. Apr 2013.
25. Spencer Barnhill BS, Paul Schaeffer, PhD. Can cold-induced cardiac activity prevent cardiac pathologies caused by obesity? Undergraduate Research Forum, Miami University. Apr 2012.

#### Hobbies/Interests

Aviation - I am a single engine private as well as instrument rated pilot.

SCUBA diving

Outdoor soccer and golf

Bass guitar

Snowboarding, camping, hiking and fishing

Fantasy football

#### Languages

English Primary

Spanish Proficient