

Muhammad Zain Mirza, M.D.
Star Orthopedics
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Employment

2022 – Current	Star Orthopedics and Sports Medicine
2019 - 2022	Assistant Professor of Orthopaedic Surgery University of Missouri-Columbia
2018 - 2019	Clinical Instructor University of Wisconsin-Madison

Education

August 2018 – July 2019	Spine Surgery Fellowship University of Wisconsin- Madison <i>Madison, WI</i>
July 2013 – June 2018	Orthopaedic Surgery Residency Penn State University-Hershey Medical Center <i>Hershey, PA</i>
2013	University of Missouri-Kansas City <i>Combined BA/MD Degree: 6 year accelerated undergraduate and graduate degree program.</i> Bachelor of Liberal Arts (BLA), Summa Cum Laude Doctor of Medicine (MD) Magna Cum Laude <i>Kansas City, MO</i>

Honors & Awards

- **Alpha Omega Alpha (AOA) Honor Medical Society**, inducted 2013
- **Chief Resident**, Penn State Orthopaedic Surgery Residency, 2017-2018
- **Summa Cum Laude - Bachelor of Liberal Arts (BLA)**
- University of Missouri-Kansas City
- **Magna Cum Laude** – Doctor of Medicine
- University of Missouri-Kansas City School of Medicine
- Pat D. Do, M.D. Scholarship in Orthopaedics
- Faye Kircher Public Speaking Contest
- Brebeuf Jesuit Public Forum Debate
- Ben Davis Debate Tournament Public Forum
- Third Place, Basic Science award CSRS Co-recipient, 2020
- SOA/OREF presentation award Co-recipient, 2021

Medical Licensure

2021, Active	Texas, unrestricted
2019, Active	Missouri, unrestricted
2018, Inactive	Wisconsin, unrestricted
2014, Inactive	Pennsylvania, unrestricted
2015, Active	DEA license, unrestricted

Research and Publications

Bible, Jesse E., Muhammad Mirza, and Mark A. Knaub. "Blood-loss Management in Spine Surgery." *JAAOS- Journal of the American Academy of Orthopaedic Surgeons* 26.2 (2018): 35-44. (Pub Med ID: 29303921).

Mirza, M. Zain, Richard D. Swenson, and Scott A. Lynch. "Knee cartilage defect: marrow stimulating techniques." *Current reviews in musculoskeletal medicine* 8.4 (2015): 451-456. (Pub Med ID: 26411978).

Mirza, M. Zain, J. Walker, H. Boateng. "Pilon fractures with intact fibula lead to higher rates and early arthrodesis." Poster presentation. Penn State Hershey Research and Quality Symposium 05/2017.

Mirza, M. Zain, KC. Walley, H. Boateng, C. Nwachucku, P. Tornetta, JS Reid " Fractures of the tibial plafond: Does the presence or absence of a fibular fracture predict future morbidity." (Submitted).

Mirza, M. Zain, Aydogan U. "Biomechanical comparison of different techniques involved in lesser toe arthrodesis: Cadaver Study."

Mirza, M. Zain, B. Herndon. Study topic: Pathophysiology of colorectal cancer and the effects of anthocyanin-enriched purple sweet potatoes on its prevention.

Mirza, M. Zain, B. Herndon. Study topic: The effects of nanotube induced trauma on rat lungs and PAMPs receptors (pathogen associated molecular patterns).

Mirza, M. Zain, John Matsumura, Seth Williams. "Anterior lumbar interbody fusion: Post-operative morbidities and risk factors." (Manuscript Submitted).

Mirza, M. Zain, Sydney Olson, Annalise Panthofer, John Matsumura, Seth Williams. "Mini-Anterior lumbar interbody fusion: surgeon learning curve." (Presented. Wisconsin surgery Conference).

Mirza MZ, Olson SL, Panthofer AM, Matsumura JS, Williams SK. "Surgeon Learning Curve and clinical outcomes of minimally invasive anterior lumbar interbody fusion with posterior percutaneous instrumentation." Poster Presentation, Wisconsin Surgical Society Annual Meeting, Nov 8, 2019.

Mirza MZ, Olson SL, Panthofer AM, Matsumura JS, Williams SK. "Surgeon Learning Curve and clinical outcomes of minimally invasive anterior lumbar interbody fusion with posterior percutaneous instrumentation." Podium Presentation, Lumbar Spine Research Society Annual Meeting, Nov 13, 2020.

Naomi N. Lee, Jacob S. Kramer, Aaron M. Stoker, Theodore J. Choma, Don K. Moore, Muhammad Mirza, James L. Cook. "Metabolic Responses Of Degenerative Intervertebral Discs From Patients With And Without Low Back Pain." Podium Presentation, Orthopaedic Research Society.

Blaine T. Manning, Suryanshi Rawat, Casey Fogarty, Nathan Cherian, Ahdarsh Vallabhaneni, Stefan Hanish, Andy Lee, Mark J. Lambrechts, Fassil Mesfin, Muhammad Z. Mirza, Theodore J. Choma, Don K. Moore. "Physical Therapy on Postoperative Day Zero Following Lumbar Spine Surgery Decreases Length of Stay". (In submission).

Manning BT, Rawat S, Fogarty CA, Hanish S, Lee AS, Vallabhaneni A, Cherian N, Mirza MZ, Choma T, Moore DK. "Physical Therapy on Postoperative Day Zero Following Lumbar Spine Surgery Decreases Length of Stay." Poster presented at the Mid-America Orthopaedic Association (MAOA) 2021 Annual Meeting. April 21-25, 2021, in Amelia Island, FL

Manning BT, Cherian N, Vallabhaneni A, Hanish S, Lee A, Rawat S, Fogarty C, Lambrechts M, Mesfin F, Mirza M, Choma T, Moore D. "Physical Therapy on Postoperative Day Zero Following Lumbar Spine Surgery Decreases Length of Stay." Podium presentation at Southern Orthopaedic Association 38th Annual Meeting. July 21-24, 2021, Isle of Palms, SC.

Manning BT, Thomson M, Huff H, Rawat S, Harris S, Lambrechts M, Mesfin FB, Mirza MZ, Choma TJ, Moore DK. "Physical Therapy on Postoperative Day Zero Following Cervical Spine Surgery Decreases Length of Stay." Podium paper presentation at the North American Spine Society (NASS) 2021 36th Annual Meeting. September 29-October 2, 2021, Boston MA.

Manning BT, Cherian N, Vallabhaneni A, Hanish S, Lee AS, Rawat S, Fogarty CA, Lambrechts M, Mesfin FB, Mirza MZ, Choma TJ, Moore DK. "Physical Therapy on Postoperative Day Zero Following Lumbar Spine Surgery Decreases Length of Stay." Podium paper presentation at the North American Spine Society (NASS) Spine Across the Sea 2021 Annual Meeting. July 5-8, 2021, Kohala, HI

Manning BT, Rawat S, Cherian N, Vallabhaneni A, Hanish S, Lee AS, Mesfin FB, Mirza MZ, Choma TJ, Moore DK. "Physical Therapy on Postoperative Day Zero Following Lumbar Spine Surgery Decreases Length of Stay." Presented at the Lumbar Spine Research Society (LSRS) 2021 Annual Meeting. April 8-10 2021, in Chicago, IL

Manning BT, Cherian N, Vallabhaneni A, Hanish S, Lee AS, Rawat S, Fogarty CA, Lambrechts M, Mesfin FB, Mirza MZ, Choma TJ, Moore DK. "Physical Therapy on Postoperative Day Zero Following Lumbar Spine Surgery Decreases Length of Stay." Podium paper presentation at 2021 University of Missouri Annual Comparative Orthopedics Day. April 16, 2021, in Columbia MO.

Kramer Jacob BS, Moore DK, Lee N, Stoker A, Mirza MZ, Choma TJ. "Characterization of Basal and Cytokine Stimulated Biomarker Profiles of Degenerative Cervical and Lumbar Fusion explants ex-vivo." Cervical Spine Research Society (CSRS). Podium presentation. 3rd Place. December 2020.

Invited Presentations

- "Perioperative management of bleeding." *Missouri State Orthopaedic Association*, 2020.
- "Management of Bleeding during spine surgery." Grand Rounds, Department of Orthopaedics, University of Missouri
- "Lower Back Pain." Grand Rounds, Department of family medicine- University of Missouri
- "Thoracolumbar Spine Trauma," MU Department of Orthopaedic surgery senior residents, March 2020
- "Spine Infections," MU Department of Orthopaedic Surgery senior residents, 2020.
- "Spinal Stenosis," Columbia community presentation, February 2020

Grants

- Investigator-Initiated Research Grant (Irrimax Corporation)
 - “Randomized Controlled Trial Comparing Irrisept vs. Normal Saline for Wound Irrigation after Posterior Spine Surgery.”
 - PI
 - \$25,000
- Spinal Cord Injury Study (Mitsubishi Corporation)
 - Randomized Control trial placebo vs. MT-3921 comparing post-operative recovery in patients with acute traumatic cervical spinal cord injury
 - PI for enrollment site at University of Missouri
 - \$41,494 per patient

Committees

2020 – 2022	Institutional Review Board-University of Missouri (Member)
2020 – 2022	Quality Improvement Committee- Department of Orthopaedics
2022 – Present	Reviewer – International Journal of Spine Surgery

Professional Societies

2019 – Present	Lumbar Spine Research Society (Member)
2018 – Present	North American Spine Society (Member)
2013 – Present	American Academy of Orthopaedic Surgeons (Member)
2020 – Present	AO Spine (Member)
2008 – Present	AO Trauma (Member)
2019 – Present	Cervical Spine Research Society
2013 – Present	Alpha Omega Alpha (AOA) Honor Medical Society (Member)
2020 – Present	Missouri State Orthopaedic Association

Professional, Leadership & Volunteer Experience

2018 – Present	Global Surgery- Penn State, Ghana (Founding Member)
2009 – 2018	Program leader, Penn State -Quality Improvement
2008 – 2018	Vice President, <i>UMKC Muslim Students Association</i>
2008 – 2010	Medical School Liaison, <i>UMKC Pakistani Students Association</i>
2010	UMKC-SOM Hospital Hill Charity (Volunteer)
2010	Ronald McDonald House Charities, (Volunteer)
2007 – 2013	Northwest Islamic Community Center (Volunteer)
2008	Alpha Phi Omega, Service Fraternity (Volunteer)
2009 – 2013	Sojourner Health Clinic, for homeless (Volunteer)
2009 – 2011	KCFEC /Sojourner Eye Clinic, for underprivileged (Volunteer)
2010 – 2011	The Peace Clinic, for underprivileged minorities (Volunteer)
2005 – 2007	St. Anthony’s Hospital (Volunteer)

Teaching Experience

2019 – 2022	Assistant Professor, University of Missouri-Columbia
2020 – Present	Medical Student ACE Mentor, University of Missouri-Columbia
2018 – 2019	Clinical Instructor in Orthopaedics, University of Wisconsin-Madison
2017 – 2018	Spine Trauma Instructor, Responsible for weekly spine trauma conference for Orthopaedic residents and students
2017 – 2018	Orthopaedic Sub-Internship clerkship instructor and student Mentor, Penn State
2011	Clinical Skills Instructor, UMKC
2007 – 2013	UMKC School of Medicine Volunteer Tutor
2012 – 2013	Student Mentor, UMKC

Prior Work Experience

2006 – 2008	Nuclear Cardiology Associates, Merrillville, IN; Clinic Maintenance
2009 – 2010	Cardiology Associates- Crown Point, IN
2004	City Cellular, Gary, IN; Sales
2006 – 2007	Jackson Hewitt Tax service regional offices, IN; IT consultant
2008 – 2011	ZAH Inc, Kansas City, MO; Sales

Other

Language Fluency

- English (Native/functionally native)
- Urdu (Native/functionally native)
- Punjabi (Native/Functionally native)
- Hindi (Advanced)
- Arabic (Basic)