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Highlights from the First Student-Run Orthopedics Clinical Research Showcase at Wayne State University School of Medicine

Arif Musa¹, Emily Lau¹, Martin Weaver¹, Collin Bennett¹, Saif Farhan²

¹ School of Medicine, Wayne State University, Detroit, MI 48201, USA

² Department of Orthopaedic Surgery, University of California Irvine Medical Center, CA 92868, USA

The Orthopedic Surgery Interest Group Clinical Research Showcase took place on December 3, 2019 on the campus of Wayne State University School of Medicine as the first such student-run event of its kind since the school was established in 1868 as Detroit Medical College. The Clinical Research Showcase was developed by the student leadership of the Orthopedic Surgery Interest Group (Arif Musa, Emily Lau, Martin Weaver, and Collin Bennet) with the support of the Office of Medical Student Research Programs, which was established in 2017. Medical students were encouraged to submit abstracts for poster and podium presentation with the latter taking place in the Margherio Conference Center (*Figure 1*). The goals of the showcase were to promote student engagement in research, develop skills such as abstract writing and poster design, receive valuable feedback from judges, and foster inter-disciplinary collaboration. These goals were based on previous articles that have documented the impact of peer-led symposia as a valuable learning experience and means promote student involvement in research endeavors [1-3.] It was explicitly stated in the call for abstracts that medical student were welcome to submit abstracts of completed, ongoing, and planned research in any medical discipline. The research showcase was supported by the generous Office of Medical Student Research whom provided dinner and funding for several students' posters to be printed.

Over 70 abstracts were submitted by medical students at Wayne State University. Research from over 30 institutions and three countries was presented with collaborations from other specialties included. Abstracts for case reports, cohort studies, meta-analyses, database studies, systematic reviews, cross-sectional studies, randomized controlled trials, and other study designs were presented. A complete list of presented abstracts are included in the *Supplement*. The keynote address was delivered by Dr. Eileen Crawford from the University of Michigan Health System Department of Orthopaedic Surgery. Dr. Crawford's keynote speech expounded upon the importance of diversity and inclusion in the fields of orthopaedic surgery and sports medicine (*Figure 2*). Podium and poster presentations were judged by Dr. Crawford, Dr. Nasr Kerellos (Detroit Medical Center, Department of Orthopedic Surgery), Dr. Nick Bolz (Detroit Medical Center, Department of Orthopedic Surgery), Dr. Lauren Stimson (Detroit Medical Center, Department of Orthopaedic Surgery), Dr. Melanie Hanna-Johnson (Detroit Medical Center Department of Internal Medicine), Dr. Anil Aranha (Detroit Medical Center, Department of Internal Medicine), Dr. Kevin Sprague (Wayne State University School of Medicine, Admissions and Enrollment), and Dr. Joseph Dunbar (Wayne State University School of Medicine, Office of Medical Student Research and Programs). Podium presentations were held to a strict time limit of five minutes, while poster presentations were presented to the judge's preference when a scoring decision was able to be made.

Highlights from the clinical research showcase include Jacob Young's and Brendan Page's podium presentation about the association between concussion and lower extremity injury among National Basketball Association players. Daniel Chen presented a systematic review and case report concerning irreducible interphalangeal joint dislocations. Notably, technological advancement was a common theme among presenters. One study explored the use of unmanned aerial drones to administer naloxone on the scenes of opioid overdoses and concluded that unmanned drones travel faster straight-line distances than

*Corresponding author:

Dr. Arif Musa

Department of Orthopaedic
Surgery, University of
California Irvine Medical
Center, CA 92868, USA
Phone: +1(313)577-1450
Email: gm9734@wayne.edu



Figure 1: The Margherio Conference Center of Wayne State University School of Medicine where five-minute podium presentations were given by students

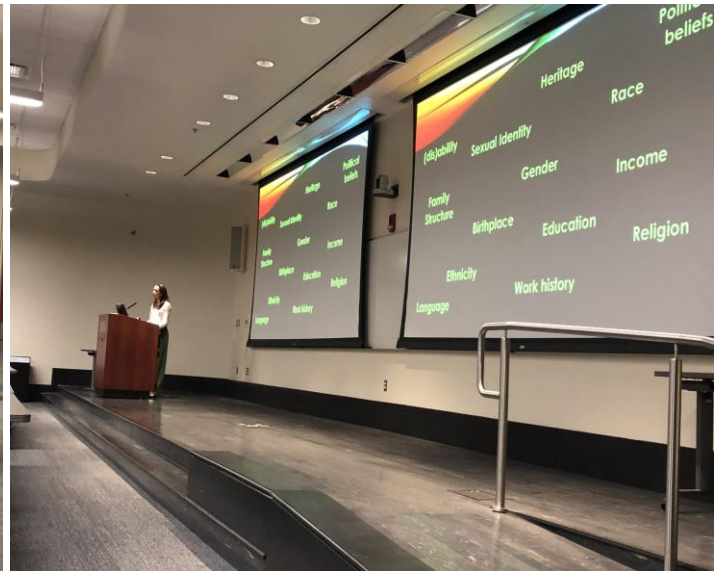


Figure 2: The keynote of the research showcase was presented by Dr. Eileen Crawford, a member of the Orthopedic Sports Medicine department at the University of Michigan. Her speech highlighted the importance of diversity within the field of orthopedic surgery, practicing diversity and its broad meaning

ambulances. Another study examined the use of machine learning to optimize troponin specificity in the emergency department. A study testing a novel wearable device to aid in injury risk assessment among skeletally immature baseball players found that the device could be used to compare pitch parameters against age-matched normative parameters. Each study was scored by judges on the following criteria: novelty, study design, clinical impact, and presentation quality. Each criterion was scored from 1 to 5 (20 point maximum). Judges included attending surgeons and residents from the Detroit Medical Center, Henry Ford Health System, and University of Michigan Health System.

In the podium presentation category, first prize was given to Christian Huber for his presentation entitled “Effect of Exercise Intensity on Post-stroke Rehabilitation in Rats.” Second prizes went to Arif Musa for his presentation “Assessing and Reducing Adult Preoperative Anxiety: A Survey of 3,661 Members of the American Society of Anesthesiologists” and Daniel Chen for his presentation “Irreducible Dislocations at the Interphalangeal Joint of the Thumb: A Systematic Review and Case Report.” Third prizes were given to Jacob Gluski (“Experiences in Biobanking: DMC Hydrocephalus Cohort”), Jacob Young (“Return to Play Within 90 Days of Concussion is Associated with Increased Odds of Lower Extremity Musculoskeletal Injury Among National Basketball Association Players”), Kareem Elhage (“Application of Laser Technology in the Non-Surgical Management of Periprosthetic Joint Injection; Novel Insights from Dental Peri-Implantitis”), and Tejeshwar Singh Bawa (“Impact of Nutrition on 30-day Readmission Among Patients to the Emergency Department with Acute Heart Failure”).

In the poster presentation category, first prize was given to Matthew Tukul for his presentation “Time-to-Scene for Opioid Overdoses – Are Unmanned Aerial Drones Faster than First Responders in an Urban Environment?” and Ryan Miller for his presentation “Improving Hearing Screening with Tele-Otology.” Sanjana Kulkarni was awarded second prize for her presentation entitled “Pregnancy of Unknown location in a Cohort of Patients Treated with Methotrexate” and Collin Bennett was awarded third place for his presentation “Intravenous Lidocaine for Analgesia in Spine Surgery: A Meta-analysis of Randomized Controlled Trials.”

Ultimately, the first ever Orthopedic Surgery Interest Group Clinical Research Showcase was a resounding success. Already, plans are being

made with the Office of Medical Student Research Programs to institute the next Clinical Research Showcase in 2020 in hopes of engaging even more students and showcasing the many stellar achievements of medical students at Wayne State University! Plans for future studies include analyzing student surveys regarding the research showcase, namely students’ assessment of skills gained at the event, feelings of collaboration among student researchers before and after the event and recommendation for event improvement next year.

Conflicts of interest

The authors declare no conflicts of interest.

Source of funding

None.

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