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# CONFERENCE PROCEEDINGS

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## Collaboration in Education and Research: Stronger Together. Chiropractic Educators Research Forum (CERF), December 7, 2024

Chiropractic Educators Research Forum

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### ABSTRACT

The Chiropractic Educators Research Forum (CERF) convened a conference on December 7, 2024. During the meeting, presenters and panelists took an in-depth look at concepts and research related to what educators and chiropractic programs are doing for collaboration.

**Key Indexing Terms:** Health Occupations; Education; Professional; Interprofessional Relations

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### INTRODUCTION

The Chiropractic Educators Research Forum (CERF) holds conferences from time to time that focus on selected topics relevant to education and the chiropractic profession. These conferences showcase education research, innovations, and best practices and provide a forum for presenting scholarly work in health professions education theory and practice. The CERF held a virtual conference on December 7, 2024, "Collaboration in Education and Research: Stronger Together," which specifically focused on collaboration.

For the purpose of this conference, we defined collaboration as the process when people from two or more entities or organizations work together to complete a task or achieve a goal.

The purpose of this conference was to take a closer look at how educators are using collaborations and the challenges and benefits it brings to health professions education. During this conference, the attendees discussed what collaborations chiropractic programs are using and how collaborations should be used to prepare graduates for a successful future in health care.

Opening presentations introduced essential concepts surrounding collaboration and presenters and invited speakers answered the question "Why is Collaboration Important?" The following presentations are available.

- Experts answer the question: "Why is Collaboration Important?" Answers from: Lindsay Gorrell, Alister du Rose, Yaasirah Choonara, Gregory Cramer, Andrew Romanelli, Nathan D. Schilaty. Moderator: Claire Johnson  
Video: <https://youtu.be/3SjCYnOlaRQ>
- Experts answer the question: "Why is Collaboration Important?" Answers from: John Mrozek, Trevor Foshang, Adrian Hunnisett, Brian Anderson, Edward Murphy, Stacie Salisbury, Courtney Arnold, Sherterica Hall. Moderator: Claire Johnson  
Video: <https://youtu.be/pWUoGAX2k14>
- Experts answer the question: "Why is Collaboration Important?" Answers from: Yi Kai Wong, Valerie Johnson Robert Walsh, Eric Kirk, Tanja Glucina, Chris Major. Moderator: Claire Johnson  
Video: <https://youtu.be/0QyYBirubM>

Research and scholarly presentations are core components of this conference. After abstracts were submitted and evaluated through a rigorous peer-review process, the highest-quality abstracts relevant to the intersection of chiropractic, education, and the conference theme were selected for presentation. The conference could not have been completed without the excellent work of the Peer Review Committee. We thank the 16 members of the December 2024 Scientific Peer Review Committee for their excellent peer review of all submitted abstracts. Any reviewer who declared a conflict of interest or was an abstract author was recused from reviewing that abstract.

### CERF 2024 December Peer Review Committee

- Gina Bonavito-Larragoite, DC; Miami Veterans Affairs Healthcare System, United States
- Joy Dunwoodie, BS, DC; Palmer College of Chiropractic Florida, United States

- Lindsay Gorrell, MChiro, PhD; University Hospital Balgrist, University of Zurich, Switzerland
- Bart Green, DC, MSED, PhD; National University of Health Sciences, United States
- Adrian Hunnisett, BSc, PhD, Mphil; McTimoney College of Chiropractic, United Kingdom
- Claire Johnson, DC, MSED, PhD; National University of Health Sciences, United States
- Martha Kaeser, DC, MEd; University of Western States, United States
- Sarah Kelly, DC, MSACP; Miami Veterans Affairs Healthcare System, United States
- Meredith Meyers, DC, MD, MS; Palmer College of Chiropractic Florida, United States
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- Katherine Reckelhoff, DC, MHPE; Cleveland University, United States
- Kimberleve Rolon Reyes, PhD; Universidad Central del Caribe, Puerto Rico
- Dana Sims, PhD; University of Western States, United States
- Amanda Vozar, BS, DC; Palmer College of Chiropractic, United States
- Bret White, DC, MHSc; Miami Veterans Affairs Healthcare System, United States
- Mike Wiles, DC, EdD; University of Pittsburgh, United States

The peer-reviewed presentations from the conference are listed below alphabetically by the first author's last name. As we have done with prior CERF conferences,<sup>1-8</sup> this conference proceeding includes links to the video presentations so that they may be preserved and more widely distributed.

### ABSTRACTS

#### Building collaborative research teams across institutions: Description of a R15 grant project

Brian Anderson, James Whedon, Steffany Moonaz, Todd MacKenzie, Crina Gandila

**Objective:** This study describes collaborative efforts of an interinstitutional, grant-funded research project. **Methods:** Southern California University of Health Sciences (SCU) led a 3-year grant-funded project utilizing Medicare administrative claims comparing spinal manipulative therapy with prescription drugs for the management of neck pain. Subcontracts were awarded to Palmer College of Chiropractic (PCC) and Dartmouth College. Adhering to R15 grant requirements, 5 student researchers (2 SCU, 3 PCC) were competitively selected. The students participated in weekly meetings, research seminar series presentations, a course on spine care research, human subjects research training, and contributed to manuscript and abstract development. The primary research team, comprising faculty from the 3 institutions, collaborated through video conferencing and shared digital platforms. Live seminars at SCU were recorded for asynchronous viewing by PCC students during weekly faculty-mentored meetings. Monthly data analysis meetings facilitated interfaculty collaboration and problem-solving. Students pursued institution-specific projects under local faculty guidance. Although direct student collaboration was limited, robust faculty partnership occurred. **Results:** This collaboration yielded 4 manuscripts and 4 conference abstract submissions.

Conclusion: Student researchers acquired comprehensive experience in conducting a grant-funded research project. The production of substantial academic outputs of manuscripts and abstract submissions underscores the effectiveness of collaborative efforts of these 3 institutions. (This is a conference presentation abstract and not a full paper.) Video Abstract: <https://youtu.be/dASFUKPTA8E>

### Comparison of analysis and technique courses at parker and Life University: A descriptive report

Courtney Arnold, Sherterica Hall

Objective: The purpose of this study was to compare chiropractic analysis and technique education at Life University and Parker University. Methods: This study was a collaborative effort between faculty at Life University and Parker University. We performed a qualitative analysis of syllabi between Life University and Parker University courses (Life TECH 2711, TECH 2712, and TECH 3713 and Parker CHSC6106). The focus of the analysis was the structure of the course and content covered on high-velocity, low-amplitude adjusting and diagnostic integration. We examined course content, teaching methods, and assessment strategies. Results: The Life courses focused on hands-on skills, whereas the Parker course focused on diagnostic clinical application. Life University administered frequent lab and lecture assessments providing training in pelvic, lumbar, thoracic, and cervical setups and adjustments that focus on refining biomechanical skills. Parker University emphasized evidence-based practice, cultivates critical thinking, and refines differential diagnosis skills. Conclusion: Both courses delivered chiropractic analysis and technique content and provided assessment of the material. This study found that Life University focused on a technical approach to learning, whereas Parker University incorporated a broader clinical reasoning framework. These findings highlight the value of collaboration in curriculum development, suggesting that integrating technical skills with clinical reasoning could enhance chiropractic education. (This is a conference presentation abstract and not a full paper.) Video Abstract: <https://youtu.be/KbMYUrK6QM8>

### Collaboration between chiropractic and podiatry: Assessing pes planus in Black African recreational runners

Yaasirah Choonara, Glen Paton, Jodie Dickson

Objective: This study analyzed the Center of Pressure (CoP) trajectory during the barefoot gait cycle in Black African male recreational runners. Methods: Two disciplines collaborated on this investigation of the CoP trajectory during the barefoot gait cycle in 104 Black African male recreational runners with pes planus. This work completed in September 2024 was a collaboration between a podiatrist who contributed specialized expertise in lower limb biomechanics and foot mechanics, and 2 chiropractors who provided insights into spinal alignment, postural dynamics, and how these factors interact with foot mechanics during gait. Results: The study found that 94.2% of participants had flexible pes planus, and most exhibited neutral foot posture. The right forefoot showed significant lateral displacement of the CoP, with less displacement in the left forefoot. Load distribution was concentrated in the medial heel, medial arch, and metatarsal heads. Conclusion: The study found that pes planus in Black African recreational runners is more common than previously thought. This study highlights the need for updated clinical guidelines and further research to include female participants and improve understanding of biomechanical dynamics. The interdisciplinary collaboration between a chiropractor and a podiatrist was crucial for holistic biomechanical assessment. The approach allowed for data interpretation that addressed foot mechanics and postural/spinal factors. Such an interdisciplinary collaboration allows for a comprehensive approach to understanding both localized foot function and its broader impact on the body's biomechanics, which may lead to more accurate and applicable findings. (This is a conference presentation abstract and not a full paper.) Video Abstract: <https://youtu.be/74byjerpoQ>

### Collaboration essential for accomplishing effective assessment of an automated method to identify zygapophyseal joint crepitus in human participants

Gregory Cramer, Gregory Roytman, Jocelyn Faydenko, Scott Selby, Judith Pocius

Objective: The purpose of this study was to assess the reliability of an automated method (AM) to identify zygapophyseal (Z) joint crepitus in humans before and after spinal manipulative therapy (SMT). Methods: Investigators representing 5 disciplines (chiropractic, anatomy, biomechanics, radiology, biostatistics) from the 5 locations (National University of Health Sciences, Yale School of Medicine, Veterans Administration Connecticut Healthcare System, Salisbury Veterans Administration Health Care System, and Wheaton College) collaborated on this project. Eleven accelerometers were applied to the lumbar region of 12 human participants, 6 healthy and 6 with low back pain (age: 54.4 ± 7.1). Accelerometer recordings were collected during flexion and extension, before and after SMT. The 48 accelerometer oscilloscope recordings were analyzed to identify the joint from which crepitus vibrations originated. Human observers and the operator of the AM were blinded. Analysis was conducted by 2 human observers and the AM. Interobserver reliability (Kw) and comparison of total time to complete analysis in seconds were calculated comparing human to AM assessment. Results: Eight crepitus events were recorded. Interobserver reliability after machine learning paradigm adjusting was (Kw = 0.788; SE = 0.056, 95% CI = 0.682–0.895). Time to completion results (in seconds) were HO1: 14,883; HO2: 11,706; AM: 246. Conclusions: Multidisciplinary and institutional collaborations were essential for the

successful completion of this project. The AM demonstrated substantial reliability and was 54 times faster than human observer assessment of Z joint crepitus in humans, which supports the use of AM in the assessment of Z joint crepitus. (This is a conference presentation abstract and not a full paper.)

Video Abstract: <https://youtu.be/d-3clXZAbnM>

### Evaluation of a collaborative multi-disciplinary teaching course for masters of chiropractic students

Christina Cunliffe, Julian Martin, Laura Pendleton, Chandra Ricks, Adrian Hunnisett

Objective: The purpose of this study was to evaluate a course about integration and understanding of other musculoskeletal (MSK) health professions. Method: Faculty from McTimoney College of Chiropractic and the University of Ulster collaborated to develop a compulsory summer school experience for preclinic and final-year chiropractic students to provide knowledge about other MSK health professions. This experience assisted in meeting the UK General Chiropractic Council Education Standard 23, "gaining understanding of other professions." Session content, led by Ulster University staff, included physiotherapy, neurophysiotherapy, podiatry, diagnostic imaging, and occupational therapy, was followed by contextual learning relevant to chiropractic, and led by the chiropractic college staff. Evaluation used a brief prevalidated survey to assess chiropractic student opinions of (1) positive and negative aspects, and (2) improvements. Success was based on the ratio of positive feedback comments compared with negative comments (67% vs 33%;  $p = .02$  (z-test). Results: Survey response rate was 31/76 (41%). A majority (77%) noted social time among the other student groups (eg, chiropractic, physical therapy, and occupational therapy) was positive. Understanding different viewpoints about MSK care contributing to an integrated care pathway was positive. Radiology sessions were less positive, since this material was addressed previously in the chiropractic curriculum. Final-year students were more likely to provide more detail than preclinical students in their responses (OR: 2.1; 95% CI: 1.2–4.4;  $p = .044$ ). Case presentations and practical sessions were suggested for future improvements. Conclusions: This study demonstrated that a collaborative effort produced a successful summer school about multidisciplinary MSK care. (This is a conference presentation abstract and not a full paper.) Video Abstract: [https://youtu.be/fcrJUG\\_2gQs](https://youtu.be/fcrJUG_2gQs)

### Development of a United Kingdom interinstitutional strategic research group: An educational descriptive report

Alister du Rose, Daniel Moore, Mark Thomas, Adrian Hunnisett, David Byfield, Faye Deane, David Newell, Kenneth Young

Objective: The aim of this report is to describe the first research-focused national collaboration in the United Kingdom. Method: Prior to 2023, research and innovation (R&I) and knowledge exchange (KE) operations in UK chiropractic higher education institutions (HEI) lacked formal interinstitutional collaboration. After a call to join an inaugural meeting of researchers, funding was obtained to facilitate an initial meeting. The group co-created a mission statement and objectives before planning a series of collaborative work packages in R&I and KE. The Inter-institutional Strategic Research Group (iSRG) mission is to facilitate research collaboration and impact within UK chiropractic HEI's. Toward this end, iSRG organizes quarterly meetings to set the strategic direction for the collaboration and to operationalize activities. Results: This initiative represented a change in research culture and infrastructure, transforming research collaboration within the UK. To date, the group has undertaken the first UK-wide chiropractic HEI multisite randomized control trial investigating the effect of undergraduate pain neurophysiology education on chiropractic students. A second study is investigating patient expectations and outcomes. Moving forward, iSRG is looking at collaborative grant capture opportunities for future projects. Conclusion: The development of the iSRG group demonstrates a model of inclusive collaboration that could be replicated. Mastering the operational aspects of multi-institutional collaboration, presents a learning opportunity, which is essential for future growth and success in R&I and KE. (This is a conference presentation abstract and not a full paper.)

Video Abstract: <https://youtu.be/7CQIOH1eC3E>

### Assessing test-retest reliability of the chiropractic professional identity embodiment scale: A collaborative study

Tanja Glucina, Christian Krägeloh, Kirsten Spencer, Kelly Holt

Objective: The purpose of this study was to evaluate the test-retest reliability of the 15-item version to address the need for a quick, reliable, profession-specific instrument for measuring chiropractic professional identity (CPI). Methods: This collaborative study between Auckland University of Technology (AUT) and the New Zealand College of Chiropractic (NZCC) assessed the test-retest reliability of the Chiropractic Professional Identity Embodiment Scale (CPIES), which was initially designed and developed by both institutions. NZCC recruited students from all 4-year levels, who completed an online survey with 15 CPIES statements rated on a 5-point Likert scale. Two tests were administered 4 weeks apart, with participants matched by ethnicity, age, and sex to maintain anonymity. AUT contributed by designing and conducting the statistical analysis. Demographic data were analyzed using descriptive statistics in IBM SPSS v.29, while test-retest reliability was assessed using the intraclass correlation coefficient (ICC) with a 2-way mixed-effects model for absolute agreement. Results: Twenty-three participants met the matching criteria, resulting in a 35% response rate. Test-retest

reliability between T1 and T2 responses was rated as good to excellent (ICC = 0.92 [95% CI: 0.81–0.97]). Item-level responses varied, with most items showing moderate reliability across the 2 times. Conclusion: The collaboration integrated both institutions' strengths in participant recruitment, survey administration, and statistical analysis. The CPIES exhibited good to excellent test–retest reliability, underscoring the scales stability and supporting its psychometric robustness. (This is a conference presentation abstract and not a full paper.)

Video Abstract: <https://youtu.be/-QVZt5P-IPg>

### Development and validation of the Chiropractic Professional Identity Embodiment Scale: A collaborative study

*Tanja Glucina, Christian Krägeloh, Kirsten Spencer, Kelly Holt*

**Objective:** This study aimed to develop and validate the Chiropractic Professional Identity Embodiment Scale (CPIES) and its subscales. **Methods:** This mixed-methods study was collaboratively designed and developed by Auckland University of Technology (AUT) and the New Zealand College of Chiropractic (NZCC). Expert key informants, recruited through NZCC, provided feedback on candidate items via one-on-one cognitive interviews. AUT administered the candidate items to Board-registered chiropractors and chiropractic students, also recruited through NZCC, using an online survey. Both institutions jointly evaluated the suitability of the items using conceptually guided Exploratory Factor Analysis, with AUT leading the psychometric statistical analyses, including reliability testing. **Results:** A draft survey instrument, developed from relevant professional identity literature and refined with input from expert key informants, included 92 candidate items across 6 domains. The experts confirmed the content validity of the CPIES, which was subsequently rated by 231 participants. Exploratory Factor Analysis reduced the number of items to 15. The CPIES sum score demonstrated significant correlations with individuals' philosophical self-categorization and 5 of the 6 optional subscales. **Conclusion:** The 15-item CPIES, either as a unidimensional score or with 6 separate subscale scores, was valid and reliable measurement of CPI. The collaboration between AUT and NZCC supported the comprehensive development and refinement of the scale and ensured rigorous development and psychometric validation. (This is a conference presentation abstract and not a full paper.)

Video Abstract: <https://youtu.be/AL3slnTHRx0>

### Collaboration: A cornerstone to the development of an accredited integrated clinical practice chiropractic residency program in a large, integrated healthcare system

*Eric Kirk, Venkateswara Gogineni, Jessy Johnson, Jessica Kram*

**Objective:** The purpose of this study was to describe the internal and external collaborative efforts that occurred during the development of an accredited chiropractic residency program. **Methods:** Program personnel reviewed the collaborative efforts undertaken over a 5-year span of development and refinement of an Integrated Clinical Practice Chiropractic Residency Program. External collaboration occurred with an accredited chiropractic college and the Veteran Affairs (VA) chiropractic residency programs. Internal collaboration occurred with specialty-specific clinicians (eg, orthopedics), existing chiropractic workforce, graduate medical education resources, and organizational administration. Collaboration among participants was led by the program director through intentional, structured meetings with internal and external contributors. Goals included standardization and enhancement of clinical competence and professional skills of residents, with a focus on interdisciplinary learning and patient-centered care. **Results:** Collaboration resulted in the approval, support, and development of the first Integrated Clinical Practice Chiropractic Residency Program within a private healthcare system to receive accreditation from the Council on Chiropractic Education. The program thresholds and structure were consistent with existing VA chiropractic residency programs and existing organizational graduate medical education programs. Interprofessional collaboration resulted in exposure to 5196 complex cases and completion of 78 scholarly activities for 4 residents over 2 years. Two residency cohorts have graduated resulting in gainful employment as clinicians within the integrated healthcare system workforce. **Conclusion:** We successfully developed an accredited chiropractic residency program through internal and external collaboration that has established new training opportunities for chiropractors in an integrated healthcare system setting and sets precedent for future program development. (This is a conference presentation abstract and not a full paper.)

Video Abstract: <https://youtu.be/ZAM88DJPUsG>

### Efficiency and quality improvement for the Part I board examination: collaboration between Northwestern Health Sciences University and the American Chiropractic Board of Radiology

*Chris Major, Christopher Petrie, Alisha Russ, Christopher Smoley*

**Objective:** The purpose of this study was to document the collaboration between Northwestern Health Sciences University (NWSU) and the American Chiropractic Board of Radiology (ACBR) for the use of examination software for the ACBR Part I board examination. **Methods:** In 2021, the ACBR digitized the administration of the Part I written examination to allow question tagging and analysis, and to improve feedback to candidates. Three NWSU faculty, who have been or are currently ACBR members, initiated a partnership in which the ACBR pays the candidate fees and Northwestern faculty administer the exam and assist the ACBR with research. **Results:** The ACBR Part

I exam has been administered digitally for 4 years (2021–2024). Exam questions have been updated and new questions have been created. All questions have been tagged with topics and subtopics allowing the ACBR to scrutinize exam question quality and provide feedback to candidates regarding topics of strength and weakness. **Conclusions:** In this collaboration, an education institution assisted a professional organization in quality improvement of board exam administration. By sharing resources, the quality of the specialty board exam improved, and members of both organizations may conduct research on item analysis and candidate feedback. (This is a conference presentation abstract and not a full paper.)

Video Abstract: <https://youtu.be/R9Qz9hLYgAY>

### Characteristics of GLA:D Canada hip and knee osteoarthritis patients at the Canadian Memorial Chiropractic College: A retrospective analysis of registry-based cohort data

*Andrew Romanelli, Silvano Mior, Craig Jacobs, James J. Young*

**Objective:** This study aimed to describe characteristics and outcomes of patients in the Good Life with osteoArthritis in Denmark (GLA:D) Canada program. **Methods:** This study was a secondary analysis of a 6-week evidence-based education and exercise program for patients with knee or hip osteoarthritis (OA) via the GLA:D program from 2018 to June 2023. The collaboration between Canadian Memorial Chiropractic College (CMCC), GLA:D Canada and the University Health Network (UHN) resulted in program development/implementation, data sharing, and analysis. Linear mixed models were used to assess changes in pre- and post-program scores overtime in key patient outcomes, including pain, function, and quality of life (QOL), and were compared to GLA:D programs in Canada and internationally. **Results:** There were 234 registrants in the GLA:D Canada registry. Based on a minimally clinically important change threshold of 30%, results revealed improvements in mean responder percentage scores for knee-related pain (NRS: 47.4%), function (KOOS-12: 28.1%), quality of life (QOL) (KOOS-12: 49.1%), and hip-related pain (NRS: 44.4%). Health-related QOL and self-efficacy in managing symptoms were similar for participants with knee and hip OA. Demographics and outcomes were similar between CMCC and other GLA:D programs. **Conclusion:** Participants in the CMCC program have similar demographic profiles and post-program outcomes compared to those in the national GLA:D Canada registry and internationally. Collaboration among CMCC, GLA:D Canada, and UHN led to the successful development and implementation of this study. (This is a conference presentation abstract and not a full paper.)

Video Abstract: <https://youtu.be/8ZKv7JKgCO8>

### Collaboration infrastructure and processes to support international patient safety research in chiropractic teaching clinics: A descriptive report

*Stacie Salisbury, Kurt Kangas, Martha Funabashi, Katherine Pohlman*

**Objective:** The aim was to describe an international collaboration to conduct patient safety research across chiropractic teaching clinics (CTCs). **Methods:** This cross-sectional survey extended the SafetyNET Survey to Support Quality Improvement into new CTCs. The investigative team created a research infrastructure and collaboration processes to support the project. **Results:** Team-building, infrastructure development, and data collection took 1 year; analysis and manuscript preparation lasted 3 years. Co-principal investigators (PIs) from 2 institutions received approval to use the 14-dimension SafetyNET survey. Respective institutions approved personnel/material support, with the lead university responsible for ethics approval and data collection/storage. REDCap was the electronic data collection platform, used for its General Data Protection Regulation compliance for multisite, international projects. Team members signed data-sharing agreements outlining researcher rights/responsibilities and completed human subjects training. Investigators were recruited from established and novice patient safety researchers, including faculty and students from 6 international chiropractic educational institutions. Site PIs gained written permission from program officials and oversaw institutional data collection. Data analysts were trained in qualitative analysis techniques, completed independent coding, and met via videoconference to build team-level consensus on key themes, including cross-walking codes from across the 3 institution-based research teams. Three presentations were offered, with 1 manuscript in submission and 2 under development. Meeting times, technology, data management, and scholarly writing were challenges throughout the project. **Conclusion:** Concerted efforts among faculty and students revealed opportunities for enhancing research on patient safety culture in CTCs and demonstrated the strength of working together across institutions and disciplines. (This is a conference presentation abstract and not a full paper.)

Video Abstract: <https://youtu.be/W-hcPMB9b5U>

### Spinal manipulation in a mouse model of discogenic back pain: Description of a collaborative effort

*Nathan D. Schilaty, Khady Diop, Yuzhang Liu, Jacob Barnes, Abbey Altman, Benjamin Walters, Nathaniel A. Bates, Devina Purmessur*

**Objective:** The project aims to investigate the biomechanical and cellular mechanisms underlying force-based manipulation (FBM) to inform the therapeutic potential for discogenic back pain (DBP) and understand mechanosensory transduction in pain mitigation. **Methods:** This collaborative study partners the University of South Florida (USF) Department of Neurosurgery, Division of Chiropractic, with The Ohio State University (OSU) departments of Biomedical Engineering and Orthopaedics. The goal is to establish the effectiveness of FBM on DBP by



exploring its impact on intervertebral disc (IVD) structure and dorsal root ganglia (DRG) function with an in vivo mouse model. A mouse model ( $n \geq 40$ ; OSU) of IVD injury will simulate DBP (surgical injury to L4 disc). FBM will be applied with a modified (3D-printed) high-velocity, low-amplitude instrument (ActivatorV) to specific lumbar regions 2–3x/week for 12 weeks. Mice will be divided into 3 groups receiving FBM pre- and/or post-injury and a control group. Outcomes include histological and biomechanical assessments of the IVD, DRG, transcriptomic analysis, and behavioral tests of pain (VonFrey, open-field, grip test, tail suspension). Results: OSU graduate students have been trained by a USF chiropractor to deliver instrument-assisted FBM to mice. Intraclass correlation of instrument preload and force delivery were 0.631 and 0.846, respectively, demonstrating good to excellent reliability. The study began October 2024 and will be completed in May 2025. Conclusion: This interdisciplinary collaboration leverages USF researcher expertise in clinical FBM and biomechanics and OSU researcher capabilities in biomechanics and genomics, providing a comprehensive opportunity to advance research of biomechanical and cellular mechanisms underlying FBM. (This is a conference presentation abstract and not a full paper.) Video Abstract: <https://youtu.be/xmHdSAZoj6A>

### **A collaborative study on publication literacy in chiropractic education stakeholders**

Jennifer Smith, Edward Murphy, Stacie Salsbury

**Objective:** The aim was to convene a multidisciplinary team to investigate knowledge of scientific publishing among chiropractic education stakeholders. **Methods:** Three librarians, 1 teaching and learning coordinator, and 1 researcher from multiple campuses of a chiropractic college collaborated on a study of predatory publishing. The team met weekly via videoconference to design the project, complete ethics applications/survey beta-testing, and engage in scholarly writing and research skills, which were new to the librarians. An online survey was administered to a convenience sample of 2476 faculty, staff, and students. **Results:** Respondents (8.4%) included 111 chiropractic students, 35 faculty, 16 administrators, and 42 staff. Twenty-six percent had published 1 or more peer-reviewed publications, 43% were familiar with predatory journals, 42% were not, and 15% were unsure. Although 51% were not confident in identifying predatory journals, respondents identified features including no/insufficient peer review, no/fake editorial board, promise of fast publication, high publication fees, no/fake impact factors, publication of plagiarized articles, and unsolicited article requests. Sixty-one percent indicated they would like training/resources on identifying quality academic journals for publication/research. Through this collaboration, intercampus and interdepartmental relationships were enhanced. The librarians benefitted from coaching from the research faculty. **Conclusion:** Chiropractic faculty, staff, and students are familiar with predatory publishing, but most respondents sought training on identifying quality academic publications, suggesting future opportunities for scholarly collaboration between the library and research staff. (This is a conference presentation abstract and not a full paper.)

Video Abstract: <https://youtu.be/1Lkqde2Mqg>

### **Veterans Affairs Palo Alto Health Care System integrated clinical practice chiropractic residency collaboration with neurosurgery services at VA Palo Alto: A descriptive report**

Robert Walsh, Dean Dennis, Robert Butler, Emam Saleh

**Objective:** The purpose of this study was to describe a collaboration between neurosurgery attending medical physicians, fellows, and residents with chiropractic residents in a 1-year rotation within a neurosurgery outpatient clinic. **Methods:** The chiropractic and neurosurgery services at Veterans Affairs Palo Alto Health Care System collaborated to create a learner-centered curriculum to improve interprofessional knowledge, communication, and relationships through mentored training in a patient-centered, outpatient neurosurgery clinic. Content was based on milestones from the 2017 Council on Chiropractic Education Residency Program Accreditation Standards. Data from electronic health records measured the change in frequency of neurosurgery referrals to chiropractic care over time. **Results:** Four chiropractic residents, 4 neurosurgery fellows, and several medical residents completed the rotation from January 2021 to June 2024. The rotation included education about guideline concordant spine surgery options for patients with neuropathic pain. Neurosurgeons and their fellows received training in nonsurgical pain options for complex spinal conditions. Neurosurgery referrals to

chiropractic increased from 16 consults (2017 to 2019) to 44 consults (2021 to June 2024). **Conclusion:** As a result of this collaboration, chiropractic residents received neurosurgical clinical experience, neurosurgical fellows and medical residents received training on appropriateness and safety of chiropractic interventions. The increase in the number of neurosurgical patients referred to chiropractors at Veterans Affairs Palo Alto Health Care System seemed to be a result of the implementation of this collaborative program, which aimed to improve interprofessional knowledge, communication, and relationships. (This is a conference presentation abstract and not a full paper.)

Video Abstract: [https://youtu.be/z1jFGzX8\\_Ng](https://youtu.be/z1jFGzX8_Ng)

### **CONCLUSION**

This conference offered opening presentations in which experts shared their thoughts on collaboration related to education and research. International scholars presented their research projects and descriptive reports and participated in panel discussions to consider challenges and solutions related to collaboration in education. Attendees engaged by providing input on the topic of collaboration in education using the chat function throughout each session.

### **FUNDING AND CONFLICTS OF INTEREST**

Publication of the proceedings was funded by CERF. No conflicts of interest were reported for the publication of these proceedings.

### **About the Organization**

The Chiropractic Educators Research Forum (CERF) is an online forum where chiropractic educators share their insights and learn new information about research and scholarship. The CERF mission is to build scholarship and research capacity for chiropractic educators throughout the world. Contact information may be found at CERFweb.org.

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