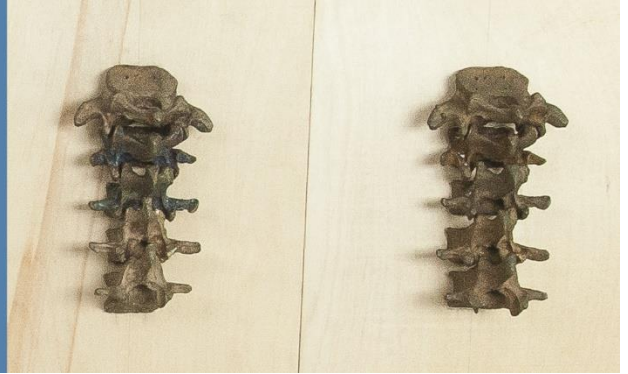


# ATSU Research

A newsletter produced by the Department of Research Support

Image (lumbar spine models) courtesy of Dr. Brian Degenhardt, Dr. Eric Snider, Ken Pamperin, and Kelly Rogers



*“Science is a collaborative effort.” ~John Bardeen*

## 2024 A.T. Still University research symposiums

Several research symposiums were held at A.T. Still University (ATSU) this year where faculty and students shared their research with the ATSU community through a combination of virtual, in-person, or hybrid events. On the Mesa, Arizona, campus, the Arizona School of Dentistry & Oral Health (ATSU-ASDOH) and three departments from the Arizona School of Health Sciences (ATSU-ASHS) hosted student research days. In Missouri, the Missouri School of Dentistry & Oral Health (ATSU-MOSDOH) held a research day at its St. Louis clinic and on the Kirksville campus.

## ATSU-ASDOH Research Week and Student Research Day

From Feb. 12-16, ATSU-ASDOH held a research week in conjunction with the 17th annual Student Research Day. The purpose of this event is to share original research conducted at ATSU-ASDOH with the ATSU community. Specifically, research projects investigated clinical problems of importance to dentistry and described how study findings can be applied to dental practice. The hybrid event began on Feb. 12 with a keynote address, “The Epidemic of HPV-Related Oropharyngeal Cancer: Why We Must Vaccinate, But Can We Screen?” by guest speakers Erich M. Sturgis, MD, MPH, from the Department of Otolaryngology-Head and Neck Surgery at Baylor College of Medicine, and Karen Anderson, MD, PhD, from the College of Liberal Arts and Sciences and the Biodesign Institute in the School of Life Sciences at Arizona State University and from the Mayo Clinic School of Medicine in Arizona. During the rest of the week, 12 second-year, nine third-year, and four fourth-year students; one orthodontics resident; and 14 faculty presented results of their research in virtual oral presentations and during an in-person scientific poster session. Over 200 students and faculty from ATSU attended the research week event.

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## **2024 ATSU-ASDOH Research Day student and resident oral presentations**

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Betancur L, El-Gendy T. Consistency of value detection for shade matching using multiple scanners.

Gagliano N, Kerr M, Spolarich AE. Diagnostic value: conventional 2D radiography vs CBCT vs tomosynthesis in vertical root fracture detection.

Groth G, Spolarich A. Oral health behaviors associated with mental health disorders.

Kim M, Howell S. Understanding pre and post COVID substance use at Maricopa Juvenile Detention Center.

Lee H, Spolarich A, Wasden M, Karlin S, Creech J. Assessing blood pressure and BMI in pediatric dental patients.

Lu L, Enubuzor C, Velasquez T, Fallone K, Shlossman M, Spolarich A. Oral health status of athletes at the Special Olympics World Games Berlin 2023.

Ly M, Howell S, Perry M, Spolarich A. ASDOH faculty knowledge, comfort, and attitude of LGBTQIA+ clinical care and dental education.

McSweeny C, Makin IRS, Spolarich AE. Nicotine pouch effects on salivary and phosphate buffered pH.

Shahparast S, Mahrous A, Tsujimoto A, El-Gendy T, Elgreatly A. Zirconia and lithium-disilicate marginal gap evaluation: an in-vitro study.

Teruya K, Park JH. Dental photography using smartphone vs DSLR cameras.

Weiseh H, Makin IRS, Gettleman B, Abrams J. Apical patency-dependent extrusion rate using a micro-flow testbed.

Yu M, Kaufman C, Velasquez T, Spolarich A. The relationship between food insecurity and oral health in Arizona.

## **2024 ATSU-ASDOH Research Day poster presentations**

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Andrade J, Kumar S, Shlossman M, Spolarich A. Using AI to improve dental students' ability to estimate radiographic bone loss.

Bauer M, Levenson S, Rico D, Karlin S, Spolarich A. Assessing medical students' awareness of children's oral health.

Ha D, Spolarich A, Patel S. Oral health-related quality of life following hematopoietic stem cell therapy (HSCT).

Howell S, Canterbury C, Shackelford AJ, Verma M. Using teledentistry to deliver specialty care to underserved urban patients.

Ingersoll YV, Sierra V. Management of periodontal care compliance at FQHCs: a study on dental staff perspective.

## **Presentations, continued**

Ishu I, Zhang J. IAN paresthesia during orthodontic treatment: case report and literature review.

Mahrous A, Nguyen R. The accuracy of digital surveying in removable partial denture design.

Panfil A, Breland B, Motahari M, Sims D. Emotional support dogs for healthcare workers.

Patel P, Patel S, Spolarich A. Oral health related quality of life in patients with cirrhosis.

Vian N, Kerr MA, Yineman S, Spolarich A. Endodontic testing in patients with Down syndrome: response pattern and efficacy.

## **ATSU-MOSDOH D3 Research Day**

ATSU-MOSDOH held its sixth annual D3 Research Day as a hybrid in-person and virtual event on April 11. The purpose of the event is foster a culture of research, facilitate discussions about oral health, celebrate the dedication and passion of ATSU-MOSDOH students and faculty, and inspire the next generation of dental researchers. The event showcased clinical and basic science research that focused on the importance of research in advancing the field of dentistry and improving patient care: 13 oral presentations from the research projects of 71 third-year students and 15 faculty and six posters from the research projects of 23 students and seven faculty were presented. Research topics ranged from the potential of digital dentistry to the emotional well-being of dental students. Over 400 faculty, staff, and students from ATSU-MOSDOH and the ATSU community attended the event in-person and virtually. The [Kubify](https://my.ltb.io/#/showcase/mosdoh) (<https://my.ltb.io/#/showcase/mosdoh>) platform was used to interactively share posters and presentation slides. The student project mentored by Shaista Rashid, BDS, MS, MPH, was selected as the winner of the D3 Research Day. Congratulations to D3 students Jennifer George, Jonathan Le, Logan Murry, and Daniel Vu. Jennifer George will represent ATSU-MOSDOH at the Dentsply Sirona Student Competition for Advancing Dental Research at the American Association for Dental, Oral, and Craniofacial Research meeting in New York, New York, in March 2025.

## **2024 ATSU-MOSDOH D3 Research Day presentations**

\*indicates presenter

Baysinger J\*, Dao E, Schurb M. Patient satisfaction at the STL Dental Center Urgent Care. Research mentor: Adekugbe O. *Second Place Award*

Carpenter K\*, Loken C\*, Thornley S, Thornton B. Evaluation of the special needs dental program by alumni. Research mentor: Bigg P.

Covarrubias J\*, Al Bayati R, Cai A, Desai K, Jabeen R. Impact of chairside oral health education tool on oral health literacy of patients at the St. Louis Dental Center. Research mentor: Muller R.

Cox C\*, Maddux K. Evaluating the efficacy of four solvents on gutta percha dissolution. Research mentor: Alfarra AA.

## **Presentations, continued**

Hanumanthappa N\*, Badarkhe G\*, Fatima Z\*, Antony AS. Comparing the effect of preheating packable composite on voids within a direct restoration: a micro CT study. Research mentor: Vij A.

Jasek KI\*, Serrano K. Students' perception toward the use of large language models (ChatGPT) in health education. Research mentors: Musawi A, Batista G. *Third Place Award*

Johnston R\*, Hepola C, Stoll S. The use of ChatGPT as a tool to enhance empathy learning. Research mentor: Patel P.

Khatri R\*, Haegele M, Nguyen A, Shaw A. Emotional health of dental and medical students at A.T. Still University. Research mentor: Abels M.

Le J\*, Vu D, George J, Murry L. Career mapping of final year dental students. Research mentor: Rashid S. *First Place Award*

Moreau M\*, Brubaker T, Hill A, Ingram A, Sutter G. Veterans' perceptions in quality of care at the STL Dental Center. Research mentor: Greaves D.

Nguyen R\*, Fowers R\*, Conover S\*, Golden A. Dexter dental mission: attitude of volunteers toward community service. Research mentors: Allinson R, Silva H.

Patel A\*, Sparks J\*, Rykard L\*, Dsouza S\*. Students' perceptions regarding nutritional education in dental school curriculum and its impact on personal dietary choices and nutritional counseling for patients. Research mentor: Jain P.

Shaw J\*, Barner E, Bales L, Anders B. Characteristic measurements of the greater palatine canal in hemi-sectioned cadaveric heads. Research mentor: Elmshiti H.

## **2024 ATSU-MOSDOH D3 Research Day poster presentations**

Brar A, Jafferbhoy A, Marattil R, Park HE, Richardson J. What is the effect of non-surgical periodontal therapy on HbA1c levels? Research mentor: Marquez I.

Brown B, Brown L, Williams J, Samuel S, Skidmore K, Gardner M. Cannabis use in dentistry and its impact on oral lesions. Research mentors: Greaves M, Vargo R.

George G, Kang A, Kaur G, McAtee E. Prevalence of xerostomia/dry mouth amongst ATSU-MOSDOH patients and its management protocols. Research mentor: Zarrough A.

Phan K, Rezkalla M, Sabato C, Nguyen E. A prospective study to investigate the relationship between occlusion and clinical attachment loss (CAL) using T-scan technology. Research mentor: Abdulkarim H.

Rush M, Taboada A. The effects of cannabis use on periodontal health. Research mentor: Dunivan S.

Wilkinson R, Fischer K. Effects of cannabis on intravenous sedation. Research mentor: Haribabu P.

## **ATSU-ASHS Occupational Therapy Evidence-based Practice Research Day**

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The Occupational Therapy department held an evidence-based practice research poster day on May 22. Posters were a culmination of a two-semester research project for second-year master's level students. For the project, students created an answerable evidence-based practice research question, searched through relevant literature, and found the best applicable evidence to appropriately answer their question. Brandi Fulwider, PhD, OTR/L, was the faculty advisor for all projects, and Tania Shearon, DHSc, OTR/L, CHT, C-IAYT, assisted with poster development. Four posters were presented by 15 second-year occupational therapy students. The event was attended by approximately 50 students, faculty, and staff from the Occupational Therapy department and the ATSU community.

### **2024 ATSU-ASHS Occupational Therapy Evidence-based Practice Research Day posters**

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Allen A, Arbas G, Grantham T. Children mental health interventions.

Cantu J, Jesus E, Rufrano J, Woodward J. What is the effect of robotic pets on elderly residents experiencing memory loss?

Danielson S, Lord L, Squiers S, Wickham T. Effectiveness of nontraditional occupational therapy settings on enhancing social skills in children with autism.

Lindly B, Kishimoto-Garland E, Pinto Clark J, Ward J. Occupational wellbeing of new parents: how can skilled occupational therapy practices support new parents in improving parental occupational balance and education after having a new child?

### **ATSU-ASHS Occupational Therapy Doctoral Student Capstone Presentations**

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The Occupational Therapy department held its annual Doctoral Student Capstone Poster Presentations on June 5. The doctoral capstone is an integral part of the curriculum and the culminating experience of the program. It allows students to demonstrate synthesis and application of their acquired knowledge and achieve advanced knowledge and skills in specific areas of practice. Throughout the project, individualized mentorship in a specific setting helps students assimilate contextual knowledge and learning into a unique experience that prepares future leaders in the profession. This year, topic areas involved revisioning play, program development, emerging practice areas of occupational therapy, and pre/postpartum programs. Twenty-two students presented their posters and oral presentations during the event, and it was attended by approximately 150 participants representing students, faculty, and alumni from ATSU, family members, and community-based clinicians.

## 2024 ATSU-ASHS Occupational Therapy Doctoral Student Capstone Presentations

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Baldevia A. Novel occupational therapy treatment in the pediatric ICU. Faculty advisors: Glenn A, Jones K. Site mentor: Reynaga G.

Banzon C. Health behaviors in cancer survivorship. Faculty advisor: Glenn A. Site mentor: Fonseca L.

Bradner A. Low vision and dementia: the caregiver perspective. Faculty advisors: Delbridge M, Story A. Site mentor: Krostue N.

Burhop C. Exploring advanced technology in the outpatient adult neurorehabilitation clinical setting. Faculty advisors: Andrews L, Story A. Site mentor: Schwarz K.

Collins A. Maximizing prehabilitative care for breast cancer: program evaluation and quality improvement in outpatient therapy. Faculty advisor: Shearon T. Site mentor: Ball S.

Cooper K. Discharge to success: a life skills manual developed by occupational therapists for transitioning individuals with serious mental illness from forensic health hospitals. Faculty advisor: Glenn A. Site mentor: Flanagan D.

Crowe R. The effects of a training module on occupational therapists' self-efficacy in Montessori settings. Faculty advisor: Jones K. Site mentor: Beunig T.

Downs R. Community education to postpartum parents about pelvic health. Faculty advisors: Wolf R, Shearon T. Site mentor: Lober A.

Florez R. Nourish to Flourish parent program: an educational program for caregiver involvement with children who have developmental delay. Faculty advisors: Bonner B, Glenn A. Site mentor: Lopez G.

Foster K. The impact of individualized exercise programs on athlete's perception of performance in winter adaptive sports. Faculty advisors: Andrews L, Glenn A. Site mentor: Shoaff T.

Gratzer B. The effect of the safe and sound protocol on emotional regulation of children: the caregiver perspective. Faculty advisors: Bonner B, Jones K. Site mentor: Hunt D.

Kranz J. Seeing health differently: physical activity and nutrition for older adults with visual impairments. Faculty advisors: Delbridge M, Fulwider B. Site mentor: McPherson A.

Kuemper K. Mindfulness in motherhood: a mindfulness, meditation, and yoga-based education program for post-partum women. Faculty advisors: Jones K, Story A. Site mentor: Brown B.

Kwangaba I. Client-centered life skills education program for enhancing successful integration among newly arrived refugees and asylum-seeking Afghan women. Faculty advisor: Bonner B. Site mentor: McDonald L.

Lamb M. Entrepreneurial self-efficacy in occupational therapy graduate students. Faculty advisor: Radziak J. Site mentor: Story A.

Medel A. The effects of a canine intervention workshop on occupational therapists practitioners' knowledge and interest in utilizing animal assisted therapy in clinical practice. Faculty advisor: Fulwider B. Site mentor: Lambert L.

## **Presentations, continued**

Morrissey K. Impact of a leisure education program on older adults. Faculty advisors: Delbridge M, Story A. Site mentor: Richardson E.

Seedall A. Dance as a sensory-based occupation. Faculty advisor: Bonner B. Site mentor: Bean D.

Sievert G. Sensory's role in the general education classroom. Faculty advisors: Bonner B, Glenn A. Site mentor: LeSueur B.

Swarztrauber J. Understanding the role of occupational therapy in infertility. Faculty advisors: Shearon T, Wolf R.

Uttech E. Meditation with self-Reiki techniques as treatment intervention for individuals with generalized anxiety disorder. Faculty advisor: Shearon T. Site mentor: O'Haren K.

Watterson M. The impact of vision training on visual-perceptual skills in male soccer players. Faculty advisors: Delbridge M, Radziak J. Site mentor: Rabasca M.

## **ATSU-ASHS Physical Therapy Student Research Capstone Poster Day**

The Physical Therapy department held its annual Student Research Capstone Poster Day as a hybrid event on June 5. Sixteen posters involving 58 students were presented in person during two concurrent sessions and were also streamed virtually for remote viewing. The [Kubify](https://my.ltb.io/#/showcase/atsudpt) (<https://my.ltb.io/#/showcase/atsudpt>) platform was used to archive all presentations. Each research poster is the outcome of a two-year capstone project for doctor of physical therapy students. Projects typically involve multiple students and are mentored by full-time physical therapy faculty. With the support of the Department of Research Support and of Academic Technologies, the poster day was attended by over 100 participants representing students and faculty from ATSU, alumni, community-based clinicians, and families. One presentation received the Outstanding Research Capstone Award and one received an honorable mention. The Physical Therapy department is looking forward to the 2025 Capstone Poster Day on June 4.

### **2024 ATSU-ASHS Physical Therapy Poster Day presentations**

\*indicates presenter

Adams W\*, Stewart B, VanOosten B. Perspectives of parents on child's participation in school-based sports with a physical disability. Faculty mentor: Fay D.

Allen S, Ogle M, Shockley T\*. Health profession students' knowledge of caregiving and caregivers. Faculty mentors: Bordenave L, Bordenave E.

Bingham A, Desrosier W\*, Mehciz M, Ansel M, Weiler L. Vitals are vital: a qualitative methodology study. Faculty mentors: Hayes J, Hodges C. *Outstanding Research Capstone Award*

Brown M\*, Wishman B, Guterman H, Wagner C. High intensity gait training during chronic stroke rehabilitation. Faculty mentor: Little V. *Honorable Mention*

## **Presentations, continued**

Cantu C\*, Haddock K, Yopez P, Mahdavi S. Difficult conversations in physical therapy. Faculty mentors: Robinson C, Parker S, Bordenave L, Wilkinson T.

Coombs B, Hankerson C\*, Knudson T. Breast cancer related lymphedema effects on reaction time. Faculty mentor: Doublestein D.

Dodson J\*, Hughes N, Shuler D. Perspectives of athletes on participation in school-based sports with a physical disability. Faculty mentor: Fay D.

Goodson C\*, McNallan R\*, Lambach M. Investigating the frequency physical therapists integrate exercise recommendations for secondary stroke prevention into HEP prescriptions. Faculty mentor: Karstens J.

Guzman J, Watan J, Venegas M\*. Instructional approaches on grade V lumbar rotation manipulation for student physical therapists. Faculty mentor: Manton C.

Knadler M, Lunt E\*, Patel S, Quintanilla K, Swan S. A comparison of manual and dilator therapy with or without the use of lidocaine for pelvic pain: a retrospective study. Faculty mentors: Roehling T, Kays P.

Knutson A, Johnson K\*, Parish L, Sims S, Quinn E. Predicting future leaders in physical therapy from characteristics identified on PTCAS applications. Faculty mentors: Kuettel J, Bordenave L.

Koki C\*. PTs' perceptions of and preparedness to address SDH in athletic populations: a preliminary analysis. Faculty mentor: Picha K.

Libby R, Sholola K, Showalter A, Slusher A, Sluyter R\*. IPE and IPC: do they impact healthcare professionals perceptions of each other and affect collaborative care? Faculty mentions: Kays P, Robinson C.

Stortz T, Behr K, Nguyen J, Dudzik A\*, Soberón S. Balancing acts: exploring dual-task performance on gait kinematics and spatiotemporals. Faculty mentors: Little V, Queen M, McIsaac T.

Tam S\*, Lam E\*, Danen C. A retrospective case study of West Nile virus: rehab and prognosis. Faculty mentor: Kuettel J.

Williams T, Dax A, Hirsch B\*. The effect of chronic edema on limits of stability in total knee arthroplasty. Faculty mentor: Doublestein D.

## **ATSU-ASHS Athletic Training Applied Research Projects**

In June and December, the Athletic Training department hosted its annual Applied Research Project (ARP) presentations for its doctor of athletic training students. The goal of the ARP is to advance practical knowledge in athletic training based on applied research and analysis. Students identify a project of interest that is applicable to their work setting and learn the process of identifying a problem, researching solutions, implementing change, and measuring outcomes. Students can engage in original research, case reports, quality improvement initiatives, or special projects. Using the [Kubify](https://my.ltb.io/#/showcase/atsudat) (<https://my.ltb.io/#/showcase/atsudat>) platform, 10 students presented results of their research projects.



## **2024 ATSU-ASHS Athletic Training Applied Research Project presentations**

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Bourne S. Implementing meditation and music listening in adolescent athletes with time-loss injuries. Faculty advisor: Valovich McLeod T.

Gullo A. Athletic trainers' motivations for and satisfaction with transition to the physician practice setting. Faculty advisors: Harris N, Welch Bacon C.

Lanzer L. Examining the work-related quality of life of athletic trainers. Faculty advisor: Anderson B.

Nadeau J. Documentation: how can it be better at St. George's School. A quality improvement project. Faculty advisor: Snyder Valier A.

Proctor-Willman C. Student and preceptor perceptions of the immersive clinical experience: case series pilot study. Faculty advisor: Welch Bacon C.

Rice L. Sleep patterns and recovery amongst collegiate football players. Faculty advisor: Valovich McLeod T.

Ruiz R. Patient, treatment, and cost characteristics associated with sport-related elbow, forearm, wrist, and hand injuries: a report from the Athletic Training Practice-Based Research Network. Faculty advisor: Lam K.

Settle H. Relative energy deficiency in sports (REDS) policy: from screening to return to sport. Faculty advisor: Geoghegan R.

Torres A. Implementation of an athlete monitoring plan in academy soccer programs. Faculty advisor: Lam K.

Trevino A. Optimizing knee recovery: identifying dysfunctional tissue and implementing targeted dry needling. Faculty advisor: Anderson B.

## **ATSU-ASDOH Fall Research Day Scientific Poster Session**

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On Sept. 18, ATSU-ASDOH held an in-person Fall Research Day. Nineteen posters from student and faculty research were presented during the session. The event was open to the Mesa, Arizona, campus, and over 200 people attended. Hannah Lee, D4, was selected to represent ATSU-ASDOH at the Dentsply Sirona Student Competition for Advancing Dental Research at the International Association for Dental, Oral, and Craniofacial Research meeting in New York, New York, in March 2025.

## **2024 ATSU-ASDOH Fall Research Day poster presentations**

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Alnabulsi A, Wasden M. Parental acceptance of SDF in pediatric patients.

Andrade J, Kumar S, Shlossman M, Spolarich A. Using AI to improve dental students' ability to estimate radiographic bone loss.

Bui E, Hernandez A, Saad J, Spolarich A. The effectiveness of various commercial aligner/retainer cleansers.

## **Presentations, continued**

Butcher E, Spolarich A, Venkatesh M, Lind E. The impact of orthodontic appliances on speech production.

Byerly R, Spolarich A. The role of FQHCs in providing orthodontic care for vulnerable populations.

Chin J, Patel S. Trigger point injection as an adjunctive therapy for the management of myofascial pain in patients treated for head and neck cancers: a case series.

Groth G, Spolarich A. Oral health behaviors associated with mental health disorders.

Ha D, Patel S, Spolarich A. Oral health-related quality of life following hematopoietic stem cell therapy (HSCT).

Kantaras T, Spolarich A. Occlusal disharmony and its association with cardiovascular health.

Kim R, Kim C, Howell S. Assessing faculty readiness to engage with student diversity: a scoping review in community health education.

Lee H, Spolarich A, Wasden M, Karlin S, Creech J, Sotello S. Assessing BMI and risk for hypertension in pediatric dental patients.

Livermore C, Spolarich A. Transmission of oral pathogens from dogs to humans: implications for health and hygiene.

Lu L, Enubuzor C, Velasquez T, Fallone K, Shlossman M, Spolarich A. Oral health status of athletes at the Special Olympics World Games Berlin 2023.

Mai S, Maruska E, Odeh L, Flask J, Zandona AF, Holland JN, Parikh N. Evaluating the prevalence of academic entitlement in dental students.

Mann A, Elgreatly A, Mahrous A, Cohen J, Tsujimoto A. Simulated cuspal deflection of bulk fill composite in ceramic vs metal molds.

Maruska E, Elgreatly A, Madaio W, Razoky K, Bay C, Mahrous A. Comparing dentist and large language model chatbot responses to patient dental questions posted on an online platform.

McSweeny C, Canterbury C, Shackelford A, Spolarich A. Oral nicotine pouches: histology of oral mucosa with chronic use.

Mustafa T, Molina D, Spolarich A. Barriers to oral healthcare for patients with muscular dystrophy: identifying challenges faced by patients and caregivers.

Worley M, Spolarich A, Deshmukh R. The potential of curcumin and manuka honey combination on dental plaque: a literature review and proposed study.