

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 we.” ~Claude Bernard

2025 A.T. Still University student research events

Several student research events 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), three departments from the Arizona School of Health Sciences (ATSU-ASHS), and the School of Osteopathic Medicine in Arizona (ATSU-SOMA) 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. 10-14, ATSU-ASDOH held a research week in conjunction with the 18th 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. 10 with a keynote address, “Diabetes and Oral Health: Lessons Learned and Implications for the Future of the Dental Profession,” by guest speaker Ira B. Lamster, DDS, MMSc, from the School of Dental Medicine at Stony Brook University. During the rest of the week, one first-year, two second-year, 13 third-year, and six fourth-year students; two orthodontics residents; one postdoctoral research fellow; and 16 faculty presented results of their research in virtual oral presentations and during an in-person scientific poster session. Two projects involved interdisciplinary collaborations with faculty from ATSU-ASHS and from Kirksville College of Osteopathic Medicine. Over 200 students and faculty from ATSU attended the research week event.

2025 ATSU-ASDOH Research Day student and resident oral presentations

Alnabulsi A, Wasden M. Parental acceptance of silver diamine fluoride in anterior vs posterior teeth.

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

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

Groth G, Spolarich A. Impact of comorbid mental health disorders on oral health behaviors.

Ha D, Spolarich A, Patel S. Oral health-related quality of life after hematopoietic stem cell therapy.

Hammond A, Leibow W, Spolarich A. Enhancing clinical preparedness in endodontics through hands-on faculty mentorship.

Hanenkrath J, Park JH, Bay C. Training, use, and modifications related to AI in postgraduate orthodontic programs in North America.

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

Mahmoodi D, El-Gendy T, Mahrous A. Value discrepancy of zirconia post-sintering compared to manufacturer's shade tab.

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

Poirier J, Park JH, Bay C. Trends among orthodontists: in-office vs commercial clear aligners.

2025 ATSU-ASDOH Research Day poster presentations

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

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

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

Cohen JR, Spolarich A, Modiri N. Effect of LaughMD app use on head and shoulder pain.

Killoran C, Shlossman M, Phillips P. Human oral health impact from zoonotic transmission of domestic canine periodontal pathogens.

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

Presentations, continued

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

Lum T, Spolarich A. Sustainable dentistry: the exploration of eco-friendly practices.

Staheli M. Comparative analysis of CBCT and traditional radiography for MB2 canal identification in maxillary first molars.

ATSU-MOSDOH D3 Research Day

ATSU-MOSDOH held its seventh annual D3 Research Day as a hybrid in-person and virtual event on April 17. The purpose of the event is to 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 included two keynote speakers. Thomas E. Van Dyke, senior vice president for clinical and translational research at the American Dental Association (ADA) Forsyth Institute and professor of oral medicine, infection, and immunity at Harvard University's School of Dental Medicine, is a globally renowned researcher and leading expert in translational research, particularly for his pioneering work on periodontal diseases and the resolution of inflammation, and presented "Can Periodontal Diseases Be Cured, or Just Managed?" Jeffrey B. Dalin, from Dalin Dental Associates and co-creator of the ADA's Give Kids A Smile signature program, received the 2022 Humanitarian Award, one of the highest honors the ADA bestows on members, and presented "Evidence-Based Dentistry in Private Practice." 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: 14 oral presentations from the research projects of 51 third-year students and 13 faculty and six posters from the research projects of 20 students and seven faculty were presented. Research topics ranged from the diagnostic potential of a new algorithm tool in periodontics to assessing the effect of patient education tools on their oral health literacy. 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 Gustavo Fernandes, DDS, MSD, PhD, was selected as the winner of the D3 Research Day. Congratulations to D3 students Henry Quayson, Gladys Dennison, and Olayemi Olabade. Henry Quayson 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 San Diego, California, in March 2026.

2025 ATSU-MOSDOH D3 Research Day presentations

Brein H, Hajro A, Halsell J, Patel U. Gap difference between measuring the working length using an apex locator, CBCT, and apical radiograph on extracted teeth: a comparative study. Mentor: Alfarra AA.

Buchanczenko K, Buchanczenko J, Nguyen M. Efficacy of coconut oil pulling on tooth shades in adults: a randomized clinical study. Mentor: Dunivan D.

Presentations, continued

Choopani Dastgerdi A, Alameddine H, Cabrera C, Canizares A, Quin R, Rana R, Khan BT. Effect of chairside assessment and patient education tools on oral health literacy of individuals with limited English proficiency. Mentor: Muller R.

Decker M, Lower S, Williams L, Yurich Z. Veteran satisfaction post-treatment. Mentor: Greaves D.

Goza J, Belcher K, Dryden P. Dental student's intention to treat children after graduation. Mentor: Rashid S.

Khan BT, Chaudhary SA, Fernandez L, Astorga YC. Polypharmacy in a dental school setting. Mentor: Marquez IC. *Second Place Award*

Khan S, Montague D, Lindborg G, Patel K, Harajli M. Retrospective chart review of the dental caries experience in the pediatric dental clinic in an FQHC dental school environment. Mentor: Bigg P.

Matejka H, Swicord A. Artificial intelligence in dental education. Mentor: Deforest A.

Mosley G, Ross W. Revising Socransky complexes: GF-MoR clusters for periodontal and peri-implant diseases. Mentor: Fernandes G. *Third Place Award*

Nii M, Vo V, Jeong H, Chang J. Perceived impact on quality of life of older adults upon the completion of dental treatment. Mentor: Clark J.

Quayson H, Dennison G, Olabade O. Periodontal diagnosis using a new algorithm tool: a clinical educational study. Mentor: Fernandes G. *First Place Award*

Shamuna A, Barry M, Dorantes A, Kigen E. Visual and textual vs textual rubrics: impact on dental student learning outcomes. Mentor: Musawi A.

Shirley M, Dawud S, Howell K. Exploring medically complex cases: a retrospective review of St. Louis Dental Center's patients. Mentor: Okhuaihesuyi O.

Zada S, Fox M, Burr A, Sabatini V. Morphometric study of the infra-orbital nerve block technique: a cadaver study. Mentor: Elmshiti H.

2025 ATSU-MOSDOH D3 Research Day poster presentations

Beavers S, Eugenio M, Garner A, Hacker A. Improving overall health by improving dental health in older adults. Mentor: Clark J.

Do J, Coates A, Richey M. Incidence of root crack after retrieving separated instrument using instrument removal system. Mentor: Alfarra A.

Huynh S, Cremer S. Assessment of patient and third year dental students awareness and the health impacts of sleep apnea at the St. Louis Dental Center. Mentor: Wilson J.

Kort A, Marshall B, Ley M. Assessing endodontic clinical diagnostic skills and material knowledge amongst third year undergraduate dental students at ATSU-MOSDOH. Mentor: Jadhav K.

Presentations, continued

Nguyen T, Altawil YA, Shukla M, Fox M. Prospective study to investigate the relationship between occlusion and clinical attachment loss (CAL) using T-scan technology. Mentor: Abdulkarim H.

Siebert K, Lewis B, Kirby A, Tenney W. Cannabis use amongst dental patients attending the St. Louis Dental Center. Mentors: Dunivan S, Haribabu P.

ATSU-SOMA Student Research Symposium

ATSU-SOMA held its inaugural student research symposium on May 21. The purpose of this hybrid event was to share original research conducted by ATSU-SOMA students with the ATSU-SOMA community. The event was attended by students, faculty, and staff of ATSU-SOMA. To participate, student research teams submitted an abstract for the event, and eight student projects were selected for the oral poster session. The inaugural research symposium was a success thanks to the support, organization, and collaboration of ATSU-SOMA's Student Government Association Research Committee, Public Health department, and chair of professional development.

2025 Inaugural ATSU-SOMA Student Research Symposium oral poster presentations

Aldor J. Soft shell helmet add-on efficacy in concussion prevention and player safety in American football: a scoping review.

Bello-Zap I, Schaefer C. Anxiety and pain in IUD placement: pre-, intra-, and post-procedure interventions to improve the patient experience.

Ha A. Outcomes of a health systems advocacy, leadership, and management (HALM) curriculum in a family medicine residency program.

Hasan R. Use of two curvilinear or "j" shaped incisions to excise distal interphalangeal joint mucous cysts.

Ozbeki H, Pfau C. Speed of psoriasis clearance with biologic therapies: a comparative analysis of PASI100₂₅ and PASI100₅₀ achievement.

Peckham J. A narrative review of the erythropoietin stimulating agents for trauma.

Rubin MA. An increase in self-efficacy and acceptance during treatment predicts smoking cessation in individuals with serious mental illness: a pilot study.

Severini C. Beyond morning sickness: the complexities of hyperemesis gravidarum.

ATSU-ASHS Occupational Therapy Doctoral Student Capstone Presentations

The Occupational Therapy department held its annual Doctoral Student Capstone Poster Presentations on June 4. 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. Thirteen students presented their posters and oral presentations during the event, and it was attended by approximately 100 participants representing students, faculty, and alumni from ATSU; capstone mentors; family members; and community-based clinicians.

2025 ATSU-ASHS Occupational Therapy Doctoral Student Capstone Presentations

Cornet A. Occupational therapy in the NICU: assessing parental outcomes through engagement in skin-to-skin care. Faculty advisor: Glenn A. Site mentor: Romeo C.

Jordan A. Examining the needs of caregivers of children with trauma. Faculty advisors: Dahl Popolizio S, Wolf R. Site mentor: Moritz K.

Lande E. Parental cancer patients: preferences and barriers to engagement in support programs. Faculty advisor: Glenn A. Site mentor: Hald M.

Legenza A. Collaborative care: enhancing multidisciplinary consistency between nursing and therapy teams through targeted nurse education. Faculty advisors: Delbridge M, Gross B. Site mentor: Jimenez S.

Moran E. Exploring the role of education on the prevention and treatment of hospital-acquired delirium to care partners, family members, and individuals with Parkinson's disease. Faculty advisor: Shearon T. Site mentor: Staenberg J.

Nagle V. Implementation of a technology-based home therapy program in a pediatric setting. Faculty advisors: Dahl Popolizio S, Glenn A. Site mentor: Michael T.

Reber J. Best practices for rehabilitation robotics to facilitate neurological recovery. Faculty advisors: Andrews L, Gross B. Site mentor: Palmiscino J.

Richey A. Dry needling applications and awareness in occupational therapy. Faculty advisor: Radziak J. Site mentor: Zaykoski S.

Semadeni S. Program development and community action planning for victims of human trafficking. Faculty advisor: Glenn A. Site mentor: Jefferson D.

Taylor E. Understanding the impact of education on emotional regulation skills and social participation for children experiencing parental cancer participating in CSCAZ support groups. Faculty advisor: Glenn A. Site mentor: Hald M.

Taylor M. Using AAT as a way to treat and enhance disrupted identity in military veterans. Faculty advisor: Story A. Site mentor: Kalb BA.

Presentations, continued

Wielinski A. The impact of a sensory wellness program to support stress management and coping strategies of first-year occupational therapy students at ATSU. Faculty advisor: Fulwider B. Site mentor: Gross B.

Wolfram K. Education on the healing process of neurologic injuries to manage patient expectations in hand therapy. Faculty advisor: Andrews L. Site mentor: Wright D.

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 4. Thirteen posters involving 51 students were presented in person and were simultaneously streamed virtually for remote viewing. Two additional posters involving four students were presented to the faculty before the event to facilitate international travel. 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 Departments of Research Support and 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. The Physical Therapy department is looking forward to the 2026 Capstone Poster Day on June 3.

2025 ATSU-ASHS Physical Therapy Poster Day presentations

*indicates presenter

Almquist T*, Villegas I, Schroeder G. Tissue quality in early stages of breast cancer-related lymphedema: a pilot study. Faculty mentor: Doubblestein D.

Brennan C*, McCarty R, Kearn K, Kerwin B. The effectiveness of interventions used to treat diastasis rectus abdominis (DRA). Faculty mentors: Roehling T, Kays P.

Chang B*, Ngonkhambay J, Kisch M. Health professions students' knowledge and understanding of caregivers and caregiving. Faculty mentor: Bordenave L.

De Mesa K*, Mateo F*. The impact of postcolonial legacy: a critical comparative analysis of the experiences of physiotherapists from former colonies. Faculty mentors: Andrian J, Roehling T.

Dill M*, Fabrick J*. Neoliberal physical therapy: examining the influence of neoliberalism on global health education and practice. Faculty mentor: Andrian J.

Haralson M*, Hart T, Gasseling K. Triple hop: component analysis of an activity limitation test used in para athletics classification. Faculty mentor: Fay D.

Kwok M*. Healthy young adults and reciting the months of the year in reverse: a cognitive assessment pilot study. Faculty mentor: Valovich McLeod T.

Presentations, continued

Lemke E*, Burnham B, Pham S, Gutierrez J. Predicting facilitators and barriers to academic success in adult learners with ADHD. Faculty mentors: Little V, Smet N.

Myhal S*, Johnson A, Maravilla C, Schaake J. The effects of isokinetic strength training exercises on balance for healthy community-dwelling older adults. Faculty mentor: Kuettel J.

Parker J*, Chamser A, Yepez-Acosta L. Discovering the nuances of clinical decision making related to vital signs assessment in outpatient orthopedic physical therapists. Faculty mentors: Hayes J, Hodges C.

Parker L*, Tiemann M, Coon K. Bounds: component analysis of an activity limitation test used in para athletics classification. Faculty mentor: Fay D.

Salcedo JP*, Brecunier W*, Egan M, Ellsworth P, Fairbanks J, Hernandez J, Hollar L, Juncker T, Pope K, Rosenberg J, Suazo F. Differential gait parameters between individuals with and without ADHD. Faculty mentors: Little V, McIsaac T.

Smreker-Bruce T*, He M, Kautzman A, VanFleet A. The role of difficult conversations in physical therapy: a qualitative study. Faculty mentors: Robinson C, Parker S, Bordenave L, Wilkinson T.

Wharton M*, Stoltz C, Nakashima T, Garcia J. Educational technique: incorporating social determinants of health into physical therapy education. Faculty mentor: Picha K. *Outstanding Research Capstone Award*

Wynkoop J*, Rens M, Lewis J. Agreement between two instruments that measure grasping reaction time: a pilot study. Faculty mentor: Doubblestein 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, 26 students presented results of their research projects.

2025 ATSU-ASHS Athletic Training Applied Research Project presentations

Beckler T. Exploring strategies to reduce mental burnout in the athletic trainer. Faculty advisor: Harris N.

Berglund K. Secondary school athletic trainers' experiences with and perceptions of concussion policy development. Faculty advisor: Valovich McLeod TC.

Blake KLC. Chino Valley High School concussion care: a quality improvement project. Faculty advisor: Valovich McLeod TC.

Presentations, continued

Clapper B. Documentation characteristics across the different clinical practice settings in athletic training: a qualitative content analysis. Faculty advisor: Welch Bacon C.

De La Mora T. Implementation of electronic medical record system in the secondary school setting. Faculty advisor: Anderson B.

Gough S. Knowledge and confidence of athletic trainers in managing rotator cuff-related shoulder pain. Faculty advisors: Snyder Valier A, Harris N.

Gunst M. ACL injuries during in-season practices and games on natural grass and artificial turf. Faculty advisor: Snyder Valier A.

Johnson L. Educators' and preceptors' perceptions of student competence assessment in athletic training. Faculty advisor: Welch Bacon C.

Klein S. Insights into effective compensation negotiation strategies for athletic trainers: a qual study. Faculty advisors: Welch Bacon C, Cavallario J.

Koren A Jr. Development of a return to learn policy for a secondary school. Faculty advisor: Valovich McLeod T.

Lee MC. Developing a concussion management plan for the secondary school setting. Faculty advisor: Valovich McLeod T.

Lewis B. Clinical management of nonspecific lower back pain in the US Army: a quality improvement project. Faculty advisor: Anderson B.

López Torres LJ. Globalizing continuing education: bridging language and expanding knowledge for athletic healthcare. Faculty advisor: Welch Bacon CE.

Lundin B. Integrating a PNF stretching protocol to reduce shoulder injury risk in baseball pitcher. Faculty advisor: Anderson B.

Madrid J. Screening protocol and prevention program for overhead athletes in the secondary athletic population. Faculty advisor: Anderson B.

Malinak EJ. Concussion education practices among professional athletic training programs. Faculty advisor: Valovich McLeod TC.

Martinez RI. Standardize acute and subacute concussion management protocol in the clinic setting: a quality improvement project. Faculty advisor: Valovich McLeod TC.

McBride M. Development of an electronic medical timeout in a secondary school. Faculty advisor: Geoghegan R.

Padilla C. The impact of sleep on performance in youth soccer athletes: a critically appraised topic. Faculty advisor: Lam K.

Phillips W II. Retention of collegiate athletic trainers. Faculty advisor: Harris N.

Presentations, continued

Rehder JL. Current state of menstrual cycle perceptions in female athletes: a critically appraised paper. Faculty advisor: Geoghegan R.

Saunders Wegeler E. Synergy in learning: unlocking the potential of bidirectional mentorship in athletic training clinical education. Faculty advisors: Snyder Valier A, Geoghegan R.

Simon J. Factors influencing retention and recruitment of Black females in athletic training. Faculty advisor: Harris N.

Smith W. The relationship between sleep quality and reaction time in collegiate baseball athletes. Faculty advisor: Snyder Valier AR.

Winter AL. Best practices for interprofessional collaboration between athletic trainers and emergency services. Faculty advisor: Harris N.

Wyatt H. Development of a mental health standard operating procedure for secondary school athletics programs. Faculty advisor: Geoghegan R.

ATSU-ASDOH Fall Research Day Scientific Poster Session

On Sept. 17, ATSU-ASDOH held an in-person Fall Research Day. Fifteen 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. Taralyn Lum, 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 San Diego, California, in March 2026.

2025 ATSU-ASDOH Fall Research Day poster presentations

Aldin O, Dehghan S, Hirad N, Thomas J, Silva A. Craniofacial analysis of orofacial clefts using 2D/3D imaging approaches.

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

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.

Cotton D, Goldman G, Shlossman M. Evaluation of marginal bone loss and survival rates of dental implants: a 5-year retrospective study.

Felton T, Spolarich A, Basha J. A discussion of GLP-1 receptor agonists and safety considerations for patients undergoing dental sedation or general anesthesia.

Groth G, Khani B, Spolarich A. Prevalence and types of malocclusion in patients with special healthcare needs.

Presentations, continued

Killoran C, Shlossman M, Phillips P. Human oral health impact from zoonotic transmission of domestic canine periodontal pathogens.

Lum T, Kumar S, Spolarich A. Sustainable dentistry: the exploration of eco-friendly practices.

Mathur S, Sotello S, Silva A. Survival outcomes of primary dentition treated with SDF: a literature review.

Mohamed S, Mahrous A. Marginal adaptation of 3D printed vs milled crowns: comparative study on ideal and non-ideal preparations.

Montalbano A, Chen C. Evaluating posterior palatal displacement in digital vs alginate impressions: a literature review.

Silva A, Patel S, Spolarich A. ATSU Epidemiology & Saliva Biobank (ATSU EpiSaliva Biobank).

Staheli M, Hammond Y, Asrari M. Mandibular canine with two roots and external root resorption: a rare case report.

Tomeh H, Nicholson A. Enhancing EBD instruction to sustain use from classroom into clinical practice.

Wichert B, Caputo A, Duong ML, Spolarich A. Barriers to dental anesthesia access in individuals with IDD.

The 2025 supplement reports on-campus student research events for the 2025 calendar year (January-December). Issues of *ATSU Research* are available on ATSU News, the University's e-news portal, under [ATSU Research News](#). Visit the [Department of Research Support](#) portal to learn more about the resources we provide for ATSU faculty researchers.