“Many ideas grow better when transplanted into another mind than in the one where they sprang up.” ~Oliver Wendell Holmes

2014 A.T. Still University research symposiums

Several research symposiums were held at A.T. Still University this year. On the Missouri campus, the A.T. Still Research Institute hosted its annual symposium. On the Arizona campus, two departments from the Arizona School of Health Sciences, the Mesa campus Interdisciplinary Research Committee, and the Arizona School of Dentistry & Oral Health hosted symposiums.

Arizona School of Health Sciences Physical Therapy Poster Days

This year, the Physical Therapy department held two student poster days on May 9 and July 11. Thirty-eight posters were presented, involving 60 students. Posters topics arose from student research projects and case studies, and they covered a variety of physical therapy topics. The poster days were attended by students and faculty from the Arizona School of Health Sciences, the Arizona School of Dentistry & Oral Health, and the School of Osteopathic Medicine in Arizona. A.T. Still University alumni and community-based clinicians also attended.

2014 Physical Therapy Poster Day posters

*indicates poster competition winners

Abruzzo G, Toogood B. The effects of home-based robot assisted rehabilitation on gait in stroke survivors.

Austin C. Implementation of hip and quadriceps strengthening with patient education on a patient with patellofemoral pain syndrome.

Bagby M. For a patient with low-back pain, do neural glides reduce pain?

Bunker D. For a 31-year-old female patient with patellofemoral pain syndrome (PFPS), will the use of Kinesio tape along with standard PT treatment be better than customary PT treatment on outcome measures on the WOMAC questionnaire and Visual Analog Scale Pain Scale?

*Chinander S. Strengthening activities to improve balance in a 6-year-old following a medulloblastoma resection. [Evidence-based practice capstone project award].

Cvitanov B, Briese K. The effect of diaphragmatic breathing exercise on females with urge incontinence.

DeBoer J. Chronic low back pain with neuromuscular control deficits.

Dennis J. The use of PNF strengthening techniques to improve balance in a 14-year-old stroke survivor.
Posters, continued

Desplain S. For a 21 year-old patient with an ACL reconstruction, are closed kinetic chain exercises in combination with open kinetic chain exercises more effective than closed kinetic chain exercises alone in improving knee function as measured with the International Knee Documentation Committee (IKDC) Subjective Knee Form scale?

Ducy M, Halani K. Functional outcomes of locomotor training using the AlterG in individuals with incomplete spinal cord injuries.


Forger D, Zicarelli K. The effects of the Kickstart Kinetic Orthosis on locomotor function in chronic stroke survivors.

Frei J. A patient case using an innovative novel technique, the One80 PT system, to eliminate ITB syndrome.

Graves C, Steinmeyer R. The use of whole body rotation to induce eye movements.

Gustafson E, Bechtold C, Akinremi O. The use of whole body rotation to induce eye movements. Does age and gender influence results?

Haldeman B, Olson M. Test-retest reliability of stair climbing time and the Margaria power test in subjects 21-35 years.

Hallacy K. Implementation of LSVT BIG for a man with Parkinson’s disease.

Halliburton J. The benefits of balance exercises in reducing the risk of falls in a community dwelling older adult.

Harju D. Effectiveness of gait training utilizing FES and the AlterG for a patient with paraplegia measured by the 3 meter walk test and 6 minute walk test.


*Henlein A, Sullivan L, Brock E. Standardized pediatric assessment tools used, and common alterations made, during assessment of motor function in children ages 2-10. [Research capstone project award].

Hodson K. Overground body weight supported gait training for a patient post acute stroke.

Isaac V, Kirin G. Examiner reliability and goniometric agreement for measuring limb asymmetry range-of-motion during an upper limb neurodynamic test.

*Jinadasa S, Jones M, Simon R. Standardized pediatric assessment: development of a questionnaire investigating tools used and common alterations made. [Research capstone project award].

*Jones J. The use of Kinesio tape for postural feedback in a 12-year-old with neck and back pain. [Evidence-based practice capstone project award honorable mention].

Kunze H. Effective scapular stabilization exercises for a patient with scapular dyskinesia.

Linquist N, Mills E, Rice E, Russell V. Consistency of the 10-meter walk test between one-week intervals in older adults 70-79 years old.

Moore P. Eccentric exercise for lateral elbow pain.

*Parker S. The use of body weight supported treadmill training and functional electrical stimulation in a 62 year old stroke survivor. [Evidence-based practice capstone project award honorable mention].

Patel G. The impact of Bal-A-Vis-X on coordination in a 6-year-old with hypoplastic left heart syndrome.

Rystrom K. Does the Wii Fit™ improve balance in a patient with impaired balance and a tremor disorder?

*Sherman J, Turner H. Predicting musculoskeletal injury in firefighter trainees: a retrospective chart review. [Research capstone project award honorable mention].
**Posters, continued**

Shillito J. The use of body weight supported treadmill training and strengthening in a 70 year old stroke survivor.

Stallings M. For a 31 year-old female with chronic low back pain, would a core exercise program focusing on abdominals, pelvic floor, multifidus and diaphragm decrease disability rating more than conventional physical therapy according to the Modified Oswestry Low Back Pain Disability Index?

Stephan K. The benefits of mobilization and exercise for a patient with adhesive capsulitis and diabetes.

Tran M, Rachwalski S, Weinstein L. A comparison of two thoracic manipulation techniques to improve neck pain in dentistry students.

Waturuocha O. Do stabilization and motor control exercises improve pelvic symmetry and decrease pain in a patient with low back pain?

Zajicek S. Use of mirror therapy in the acute stage of rehabilitation for an individual with impaired upper extremity motor control due to stroke.

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**ATSU-Mesa Interdisciplinary Research Committee 2014 Research Symposium**

The A.T. Still University-Mesa Campus Interdisciplinary Research Committee (IRC) hosted the 2014 Research Symposium during the week of May 12-16 to showcase faculty and student research that would reach all schools and colleges on campus. During the symposium, 14 faculty researchers or research teams who represented all the schools and colleges on the Arizona campus presented their research during a lunch event on each day of the symposium. About 25-30 people attended each daily event, and more people were able to attend through Livestream. On May 16, a student poster exhibit highlighted the research of more than 25 students and their mentors from across the Arizona campus. Approximately 60 faculty, staff, and students attended the poster exhibit. Because of the variety of research presentations and activities, this symposium was a great success and aligned with the IRC’s mission to promote a research culture across the University that facilitates collaboration, fosters forums for critical thinking and dialogue, and stimulates innovation.

**2014 Research Symposium faculty presentations**


Hashemian T. Text2Floss: an innovative option to improve oral health behavior.

Heick J, Hale T, Trahan H, Lynskey J. The use of whole-body rotation to induce eye movements.

Johnston S. Daniels’ distance runners: an investigation of cardiovascular fitness over 45 years.


Lynskey J. Home-based robot-assisted ankle rehabilitation for chronic stroke survivors.

McCoy L. Do virtual patient simulations foster clinical reasoning, collaboration, and engagement?

McIsaac T. Dual task mobility: from walking and talking to driving and texting.

Roush JR. Integrating learning-centered activities between clinical courses and critical inquiry courses within the physical therapy curriculum.
**Presentations, continued**

Sartor-Glittenberg C. Perceptions of attitudes when in a restaurant setting among individuals with spinal cord injury and quality of life.

Valovich McLeod T. Improving athletic training practice through the Athletic Training Practice-Based Research Network.

Welch C. The infusion of evidence-based practice and healthcare competencies throughout healthcare professions education.

Wilkinson T, Fay D, Bordenave L, Sartor-Glittenberg C, Klawonn A. Virtual grand rounds: translating EBP from the classroom to the clinic.

**2014 Research Symposium Student Poster Exhibit**


Burnham T, Heath D, Burnham R. An evaluation of the ability of osteopathic medicine clinicians to acquire neuromusculoskeletal ultrasound skills.

Burnham T, Heath D, Higgins D, Burnham R. An evaluation of the effectiveness of osteopathic medicine treatment for carpal tunnel syndrome: a pilot project.


Fayson SD, Lam KC, Snyder Valier AR, Valovich McLeod TC. The impact of sport and sex on sport-related injury patterns: a report from the Athletic Training Practice-Based Research Network.

Felix HM, Mathieson K, Belden CV, Kaufmann CR. Validating the Heparin-induced thrombocytopenia Expert Probability (HEP) score.


Garbarini J, Ray G. Hearing loss assessed by “interactive diagnostic technology” and by standard audiological procedures: a case study.


Heichelbech MD, Lam KC, Bay RC, Sauers EL. The relationships between upper extremity pain, injury history, and health-related quality of life of collegiate baseball players during late-season.

Hoang B, Sadowsky G. Use of the cross-check principle: an audiology case study.

Howell S, Paten N, Romer M. Protocols for treating patients with end-stage renal disease: a survey of nephrology fellowships.


Kay MC, Welch CE, Weber ML, Mayfield RM, Parsons JT, Valovich McLeod TC. The comparison of athletic trainers’ and school nurses’ familiarity and perceptions of academic accommodations following sport-related concussion.
Posters, continued


Miller JM, Kaylor MB, Johannsson M, Churilla JR. Prevalence of metabolic syndrome and individual criterion in adolescents in the U.S.: 2001-2010 NHANES.

Olson M, Haldeman B, Roush J. The reliability of the Margaria power test.

Phillips C, Emamy M. Patient satisfaction with oral function following orthognathic surgery.


Rodriguez J, Michener LA, Bay RC, Valovich McLeod TC, Snyder Valier AR. Increasing the interpretability of patient-rated outcome measures for evaluating concussed patients.

Vail M, Coleman C, Johannsson M, Wright K. Attitudes toward academic dishonesty in physician assistant students.

Weber ML, Welch CE, Parsons JT, Valovich McLeod TC. The impact of athletic trainer employment on school nurses’ concussion management practices for student-athletes with sport-related concussions.

Arizona School of Health Sciences Occupational Therapy Research Day

The Occupational Therapy department held its annual student research day on Sept. 9. Five research presentations were given by third-year occupational therapy students. Two of those presentations were also presented as research posters. Ninety-eight occupational therapy students attended the research day. The poster session was also attended by faculty and students from the Audiology, Physical Therapy, and Physician Assistant Studies departments.

2014 Occupational Therapy Research Day presentations


Ball T, Bongianni A, Cuomo L, Holbrook K, Hutt M, Lambert S, Meyer J, Peterson A. Functional outcomes following use of Hand Mentor™ as a home program for adults post stroke. [Faculty advisors: Diamant R, Clark M].

Brammer C, Davis J, Hosbein M, Sills K, Sifler J, Connelly C. The beliefs and practices of Arizona occupational therapists toward fieldwork education. [Faculty advisor: Greer M].


2014 Occupational Therapy Research Day posters

*only authors who presented the poster are listed

Bongianni A, Holbrook K, Lambert S. Functional outcomes following use of Hand Mentor™ as a home program for adults post stroke.

Hatchett V, Lawton S. Community mobility options for seniors in Phoenix and the East Valley.
On Nov. 1, the Sixth Annual Interdisciplinary Biomedical Research Symposium was held on the Missouri campus. The symposium included a poster session and several oral presentations given by students from A.T. Still University and Truman State University. Seventy-eight people attended the symposium: 25 faculty members and 24 students from A.T. Still University, three faculty members and 18 students from Truman State University, and four students from Central Methodist University.

Sixth Annual Interdisciplinary Biomedical Research Symposium oral presentations
* indicates presenter


Baum KR*, Singh VK. Roles of four methionine sulfoxide reductases in the virulence of *Staphylococcus aureus*.

Buell JH*, Shaffer LB, Rath TD, Sexton WL. Effects of enalapril on interstitial PO\textsubscript{2} and contractile function in the EDL of diabetic rats.

Foreman M*, Fleschner C. The role of vimentin, filensin, and phakinin in the development of cataracts.

Naik CY*, Chang Y. Possible role of MCPIP1 in insulin-enhanced vascular injury-induced restenosis.


O'Shaughnessy BR*, Giordano J. Considerations for use of deep brain stimulation in the management of chronic neuropathic pain: proposed revisions to the “analgesic ladder.”

Ricana CL*, Hart RG, Chamberlain NR. Characterizing persistence inducing factor in *Staphylococcus epidermidis* RP62A.

Wright AB*, Ramachandra R, Elmslie KS. Kv7 channels are potential regulators of the exercise pressor reflex.

Sixth Annual Interdisciplinary Biomedical Research Symposium posters
*indicates poster competition winners

*Ahmad Z. Identification of phosphate binding residues in the catalytic sites of *Escherichia coli* ATP synthase.

*Baudendistel S, Goodrich A, Seacrest J, Schwegler TM, Mayhew JL. Isokinetic leg strength balance among athletes with differing sports demands.

Baum KR, Pannu M, Choudhry M, Ring R, Singh VK. Regulation of oxacillin inducible methionine sulfoxide reductases in *Staphylococcus aureus*.

*Baum KR, Singh VK. Roles of four methionine sulfoxide reductases in the virulence of *Staphylococcus aureus*. [Outstanding poster award].

Benoist H, Arabas JL, Brechue WF, Mayhew JL. Bench press strength gains following free weight or machine weight exercise in men with low and high muscle mass.

Buell JH, Shaffer LB, Rath TD, Sexton WL. Effects of enalapril on interstitial PO\textsubscript{2} and contractile function in the EDL of diabetic rats.


Degenhardt BF, Johnson JC, Hammond T, Snider KT, Snider EJ, Pamperin K, Webb S, Graven-Nielsen T. Pressure pain thresholds are altered due to variations in technique when examining tender points.

Foreman M, Fleschner C. The role of vimentin, filensin, and phakinin in the development of cataracts.

Forker LM, Degenhardt B, Snider E, Pamperin K. Analysis of examiner findings from past Advancing Skills in Osteopathy courses.

Fullenkamp A, Maakestad KA, Reynolds JB, Arabas JL, Mayhew JL, Brechue WF. Modality-specific changes in upper-body muscular strength are independent of initial level of strength in untrained college women.


Gorman NT, Degenhardt B, Webb S. Is the change in leg length proportional to the relative rotation of the innominate?

Govro EJ, Stuart MK. Growth characteristics of THP-1 and Trichomonas tenax cells in vitro.

Habtu DY, Chamberlain NR. Investigation into induction of persistence in Staphylococcus aureus SH1000.

*Hassan SS, Johnson JC, Youakim MF. Anatomical variations in human cadaveric renal vasculature.


*Johnson JC, Degenhardt BF. Somatic dysfunction findings, osteopathic manipulative treatment (OMT), and response to OMT in patients with lumbar and cervicalgia.

Leder DC, Ramaraj P. In-vitro rescue and recovery studies of human melanoma (BLM) cell growth, adhesion and migration functions after treatment with mifepristone (RU-486).

*Lighthouse NC, Brittingham A, Wilson WA, Stuart MK. Antibodies to Trichomonas vaginalis glycogen phosphorylase isoenzymes.

Lovegreen K, Jeskey J, Mayhew JL, Brechue WF. Relationship between regional lean tissue mass and muscular strength in trained and untrained men.

Maakestad KA, Hill JL, Reynolds JB, Arabas JL, Mayhew JL, Brechue WF. Comparison of strength gains for free weight and machine weight 1RM bench press in young women matched on initial strength.

Makin IRS, Pedapati C, Heath DM. Analysis of long-duration ultrasound Doppler signals acquired at upper and lower extremity segmental arteries.

*Mengwasser K, Arabas J, Schwegler TM, Mayhew JL. Comparison of bilateral isokinetic leg strengths among women athletes.

*Naik CY, Chang Y. Possible role of MCP1 in insulin-enhanced vascular injury-induced restenosis.


O’Shaughnessy BR, Giordano J. Considerations for use of deep brain stimulation in the management of chronic neuropathic pain: proposed revisions to the “analgesic ladder.”

Rachakatla RS, Johnson S, Marberry K. Platelet-rich plasma and umbilical cord stem cells as treatments of osteoarthritis of the knee joint.

*Ramachandra R, Elmslie KS. Ion channels and receptors in group IV muscle afferents.


Posters, continued

Ricana CL, Hart RG, Chamberlain NR. Characterizing persistence inducing factor in *Staphylococcus epidermidis* RP62A.

Sedinkin JD, Chang Y. Role of MCPIP1 in controlling hepatic lipid handling.

Seiler LN, Maakestad KA, Arabas JL, Mayhew JL, Brechue WF. Push-up performance does not track changes in bench press performance following resistance training in college women.

Shaffer LB, Buell J, Rath T, Sexton WL. Impact of endothelial nitric oxide synthase (eNOS) inhibition on diaphragm interstitial PO$_2$ and contractile function.

Snider EJ, Pazdernik VK, Pamperin K, Degenhardt BF. Baseline group performance over time on manual skills assessed by lumbar spine calibrated models.


Wright AB, Ramachandra R, Elmslie KS. Kv7 channels are potential regulators of the exercise pressor reflex.

Arizona School of Dentistry & Oral Health Eighth Annual Student Research Day

The Arizona School of Dentistry & Oral Health held its annual research day on Nov. 21. Nine third-year students presented results of their research. The research projects were conducted at multiple sites throughout the United States. About 200 students and faculty from the Arizona School of Dentistry & Oral Health attended the presentations, and Livestream was used to accommodate all attendees. Student researcher Jacob Berger was awarded the American Dental Association (ADA)/DENTSPLY Student Clinician Research award, and he will present the results of his research at the national ADA annual meeting in 2015 as part of their Student Clinicians - American Dental Association (SCADA) program. Last year’s student research day winner, Omar Elnabawi, attended the 2014 ADA annual meeting and took second place in the SCADA program competition. Student researchers from the Arizona School of Dentistry & Oral Health have been participating in this prestigious national research program since 2006.

Arizona School of Dentistry & Oral Health Annual Student Research Day presentations

*indicates presentation competition winner

Aranguren M. Test methods for evaluating antibacterial biofilm treatment methods for dental unit water delivery systems.

*Berger J. Electronic cigarettes.


Martin K. Innovative approach for sequencing pathogens in chronic periodontitis.

Monsef E. Game based learning.

Nguyen J. Oral health in patient with movement disorder.

Salava N. Use of multiplex qPCR and SYBR green for assay of periodontal pathogens collected from paper point sampling.

Shahbazi N. Effect of the type of rotary instrument on the finish of different composite materials.

Shapiro S. Bone retention and success rate of immediately placed molar implants.