

For more information, contact:

Deanna Killackey	847-384-4035	630-815-5195	killackey@aaos.org
Lauren P. Riley	847-384-4031	708-227-1773	pearson@aaos.org

**Marc Swiontkowski, MD, FAAOS, named Kappa Delta Ann Doner Vaughn Award recipient
for research in hip fractures**

ROSEMONT, Ill. (February 5, 2020)—The 2020 Kappa Delta Ann Doner Vaughn Award was presented to Marc Swiontkowski, MD, FAAOS, for his research in the operative management of hip fractures, which identified the optimal surgical approach, helping to improve patients’ lives. The Kappa Delta Awards recognize research in musculoskeletal disease or injury with great potential to advance patient care.

As the population ages, the number of hip fractures has increased, with more than 300,000 people, aged 60 and older, hospitalized each year for hip fractures in the United Statesⁱ and 36,000 Canadians experiencing hip fractures annually.ⁱⁱ Hip fractures can have a devastating impact, resulting in disability and potentially death.^{iii,iv} The cost of hip fractures can be high. In the United States, a patient with a hip fracture typically spends \$40,000 in the first year for direct medical costs and approximately \$5,000 in following years.^v

In 2008, Dr. Swiontkowski, Principal Investigator Mohit Bhandari and their colleagues began studying the most effective ways to manage femoral neck fractures, one of the most common locations for a hip fracture. The femoral neck is part of the femur and is found directly beneath the femoral head. The collaborative effort eventually expanded to include over 366 orthopaedic surgeons in 81 centers across eight countries and was given the name FAITH (Fixation Alternatives in the Treatment of Hip Fractures).

The standard of care for undisplaced fractures (where the bones remain aligned in the fracture) is internal fixation, in which a mechanical implant, such as several screws or one large screw attached to a plate, reconnects the two segments of bone together. For displaced fractures, surgeons choose between internal fixation or arthroplasty, depending on patient characteristics and surgeon preference. Complications of internal fixation include the death of bone tissue (avascular necrosis), early implant failure and nonunion of the bone. These complications often require revision surgery and are associated with high morbidity and significant mortality.

“The motivating factor behind our research was the fact that there’s a very high known failure rate of internal fixation for displaced femoral neck fractures,” said Dr. Swiontkowski, professor, Department of Orthopaedic Surgery, University of Minnesota, and co-chair, FAITH Steering Committee. “In doing our own meta-analysis, we saw that one type of device may offer superior outcomes over another. However, we recognized it wasn’t definitive because of the number of subjects involved in trials to date. We endeavored to build a worldwide, multi-center, randomized trial to secure the statistical power to answer that question.”

The FAITH trial focused on internal fixation for undisplaced and displaced fractures, which typically utilize multiple cancellous screws or a sliding hip screw. When the trial began in 2008, data suggested that cancellous screws offered greater preservation of the blood supply while sliding hip screws provided greater biomechanical stability against bending stresses.

In trial research published in *The Lancet* in 2017, patients aged 50 years and older with a low-energy hip fracture requiring fracture fixation were enrolled. The data looked at the effect of a sliding hip screw versus cancellous screws on the risk of reoperation and other key outcomes. The investigators found no advantage to the sliding hip screw in terms of reoperation at 24 months for the entire cohort of displaced and non-displaced fractures. Avascular necrosis was more common in the sliding hip screw than in cancellous screws group (9% vs. 5% respectively). Smokers and patients with displaced or base of the femoral neck fractures did better with a sliding hip screw.

“The only time orthopaedic surgeons should use multiple screws is with a truly undisplaced fracture,” said Dr. Swiontkowski. “For all other fractures that they intend to fix without arthroplasty, they need to use a sliding hip screw.”

Concurrently, the researchers led a trial comparing patient outcomes between hemiarthroplasty – a surgical procedure that involves replacing half of the hip joint – and total hip arthroplasty for displaced femoral neck fractures in patients 65 years and older. The results of the HEALTH (Hip fracture evaluation with alternatives of total hip arthroplasty versus hemiarthroplasty) trial were published in the *New England Journal of Medicine* in December 2019.

The researchers plan to use the award money to fund a larger, international cohort study (3,000 subjects in each treatment category) comparing the best implant approach for fixation of femoral neck fractures with the best arthroplasty approach.

Dr. Swiontkowski previously was awarded the Orthopaedic Research and Education Foundation (OREF) Clinical Research Award in 1997 for the development of a musculoskeletal extremity health status instrument; the 2003 Kappa Delta Ann Doner Vaughn Award for the study of limb salvage or amputation after severe lower extremity trauma; and the OREF Clinical Research Award in 2010 for research titled “Setting a New Benchmark for Collaborative Trials in Trauma: The Rationale, Design, and Execution of the Study to Prospectively Evaluate Intramedullary Nails in Tibial Shaft Fractures (S.P.R.I.N.T.).”

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About the Kappa Delta Awards

In 1947, at its golden anniversary, the Kappa Delta Sorority established the Kappa Delta Research Fellowship in Orthopaedics, the first award ever created to honor achievements in the field of orthopaedic research. The first annual award, a single stipend of \$1,000, was made available to the Academy in 1949 and presented at the AAOS meeting in 1950. The Kappa Delta Awards have been presented by the Academy to persons who have performed research in orthopaedic surgery that is of high significance and impact.

The sorority has since added two more awards and increased the award amounts to \$20,000 each. Two awards are named for the sorority national past presidents who were instrumental in the creation of the awards: Elizabeth Winston Lanier, and Ann Doner Vaughn. The third is known as the Young Investigator Award. For more information about the manuscript submission process, please visit aaos.org/kappadelta.

Kappa Delta Foundation

Kappa Delta Sorority is a national organization for women with nearly 260,000 members, more than 500 chartered alumnae chapters and 169 active collegiate chapters. Established in 1981, the Kappa Delta

Foundation is a 501(c)3 organization whose mission is to secure funds for the educational, leadership and charitable purposes of Kappa Delta Sorority. The foundation is supported by member donations and bequests that fund programs and initiatives such as scholarships, internships, grants and more. Kappa Delta National Headquarters is in Memphis, Tennessee. For more information, visit www.kappadelta.org/foundation.

About the AAOS

With more than 39,000 members, the [American Academy of Orthopaedic Surgeons](#) is the world's largest medical association of musculoskeletal specialists. The AAOS is the trusted leader in advancing musculoskeletal health. It provides the highest quality, most comprehensive education to help orthopaedic surgeons and allied health professionals at every career level best treat patients in their daily practices. The AAOS is the source for information on bone and joint conditions, treatments and related musculoskeletal health care issues and it leads the health care discussion on advancing quality.

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Disclosure

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ⁱ HCUPnet. Healthcare Cost and Utilization Project (HCUP). 2012. Agency for Healthcare Research and Quality, Rockville, MD. <https://hcupnet.ahrq.gov/#setup>. Accessed Dec. 11, 2019.

ⁱⁱ Papadimitropoulos EA, Coyte PC, Josse RG, Greenwood CE. Current and projected rates of hip fracture in Canada. *CMAJ*. 1997 Nov 15;157(10):1357-63.

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^{iv} Tajeu GS, Delzell E, Smith W, et al. Death, debility, and destitution following hip fracture. *J Gerontol A Biol Sci Med Sci*. 2014; 69: 346-353

^v Brauer CA, Coca-Perrallon M, Cutler DM, Rosen AB. Incidence and Mortality of Hip Fractures in the United States. *JAMA*. 2009 Oct 14; 302(14): 1573-1579.