



Congratulations, Daniel E. Martin, M.D.,

2008 Recipient OREF/AAHKS/ZIMMER Resident Clinician Scientist Training Grant in Total Joint Arthroplasty

The 2008 OREF/AAHKS/Zimmer Resident Clinician Scientist Training Grant in Total Joint Arthroplasty was awarded to **Daniel E. Martin, M.D.**, a second-year resident in orthopaedic surgery at the University of Pittsburgh. Dr. Martin's study focuses on femoroacetabular impingement (FAI), a condition that causes abnormal friction between the femoral head of the thighbone and the hip socket, or acetabulum, and is thought to contribute to the development of osteoarthritis in younger persons and potentially lead to the need for total hip replacement.

Dr. Martin seeks to understand how everyday activities impact the progression of FAI and what activity changes, therapeutic treatments, or surgical procedures might be used to successfully intervene. In particular, Dr. Martin will map in three dimensions the biodynamics of the human hip joint in motion during clinically relevant activity scenarios, something no known existing study has done.

Dr. Martin's interest in FAI is related to his interests in injury prevention and in the biomechanics of Taekwondo, a discipline he practices at the black-belt level and also teaches. Similarly, as his orthopaedic career progresses, he hopes to treat patients in sports medicine or total joint arthroplasty and also teach residents as a strategy for advancing patient care.

"In 10 years, I aim to be teaching residents in academic practice. I know that this is important to my progression as an orthopaedic surgeon because I have experienced in Taekwondo that my skills are at their peak when I have to refine and analyze them to teach them to someone else," said Dr. Martin. "In academic medicine, I will be involved in research studies that impact patient problems rather than validate current orthopaedic practice, and hope to focus on therapeutic and surgical interventions that address the critical topic of osteoarthritis."

"As a resident, exploring your own research interests can be difficult to achieve with limited time and resources. Receiving this grant has allowed me to carry out a project that will examine the fundamental mechanisms of femoroacetabular impingement, a problem that can dramatically impede the activity of younger patients and place them at risk for early hip osteoarthritis. The tools developed to track the hip in this study, using model-based tracking and high-speed, biplane radiography, will hopefully provide a new technique to study various other hip pathologies."



Daniel E. Martin, M.D.

Zimmer has provided an educational grant to fund this one-year research grant in total joint arthroplasty.



For information about other grants and awards for orthopaedic research and education initiatives, please visit www.oref.org.

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