



Yu-Hsiu Chen, MD

2017 Dick Heinegard Award



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- Home institute: Rheumatology, Immunology and Allergy, Internal Medicine, Tri-service General Hospital, National Defense Medical Center, Taiwan
- Host Institute: Duke University
- Host Professor: Virginia Kraus, MD, PhD Summary

Summary

I was fortunate to receive the Dick Heinegard Award, an OARSI collaborative Scholarship, in 2017. This scholarship allowed me to work in the laboratory of Dr. Virginia Kraus at Duke University for three months. My project was to evaluate the effect of myokines (cytokines released by muscle cells during exercise) on a 3D-alginate primary chondrocyte culture system. Since exercise is one of the core treatments for osteoarthritis, we hypothesized that myokines have anti-inflammatory and anabolic paracrine effects on chondrocytes. In this study, we found myokines produced by muscle stimulation mimicking exercise have anti-catabolic effects. Furthermore, compared with low frequency stimulation, myokines produced in response to high frequency stimulation induced markers of *chondrogenesis* (collagen II) and late-stage chondrocyte hypertrophy (collagen X).

As a clinical physician, I had no basic research experience before. During this period, I learned various techniques including isolation of chondrocytes from cartilage, cell culture, encapsulation in alginate beads, RNA extraction, qPCR and ELISA. My exchange inspired me to continue in the field of osteoarthritis research. As a result, I am now a PhD student in Dr. Kraus's lab at Duke University. Thank you OARSI for making my experience at Duke possible.



From left to right: Janet Huebner, Yu-Hsiu Chen, Virginia Kraus and Ze-Yu Huang