

CYNTHIA CHANG

NIH-Oxford Scholar 2006

Degrees: Rice University, B.S., Bioengineering, 2006

Research Interests: Tissue Engineering, Orthopaedics



Cynthia Chang graduated cum laude with a Bachelor of Science in Bioengineering from Rice University in 2006. Cynthia is a member of the National Society of Collegiate Scholars and from 2002-2006 she was a recipient of both the J.A. & Ophelia Killgore Scholarship and the Robert C. Byrd Scholarship. In addition, Cynthia was a Rice University National Merit Scholar from 2002-2006. Cynthia's interest in science began in fourth grade when her father gave her a brochure entitled, "Women in Engineering." From sixth grade until the completion of high school, Cynthia competed nationally with the Science Olympiad club and volunteered as a bird nest monitor for an Auburn University biology professor. Her formal research experience began in the summer of 2004 when Cynthia conducted research on bioengineered, environmentally friendly aqueous film forming foams (AFFF) at the Naval Research Laboratory in Washington, DC. In the spring of 2005, while studying at Queen Mary University of London, her research in the lab of Brenda Thake focused on the effect of nitrate concentration on calcification rate in the alga *Emiliana huxleyi*. Results from this research will be submitted for publication in the near future. Cynthia's next internship involved liver tissue engineering at MIT; specifically, she developed improved substrates for *in vitro* culture of primary rat hepatocytes, including heparinized collagen gels for 2D culture and freeze-dried collagen-glycosaminoglycan matrices for a 3D perfused liver bioreactor. During her senior year at Rice, Cynthia entered the NASA-sponsored Texas Space Grant Consortium (TSGC) Design Challenge as part of a team to design a system and device for healing bone fractures in microgravity environment. Her team produced a prototype of an external fixation device that actively applies movement to the fracture site and has filed a provisional patent for the device. The project has won numerous awards from the TSGC, first place at NASA's Revolutionary Aerospace Systems Concepts – Academic Linkage 2006 Forum, and the Arthur C. Clarke Foundation Dr. John L. McLucas Award for Study of Space Safety. While receiving these numerous academic awards, Cynthia also served on the executive committee of the Rice Taiwanese Association, played for the Women's Rugby Club, competed in Brazilian jiu-jitsu, and taught English as a second language. Cynthia aspires to develop new means of tissue engineering for medical applications.