Investigator:	**Nick Willett** Phone: (404) 321-6111 ext. 3248 Email: nick.willett@gatech.edu
Primary Research Interest:	Bioengineering
Description of Research:	My overall research has focused on a systems integration approach to musculoskeletal disease and regenerative engineering by applying novel imaging and engineering approaches to mechanistic biology problems. My current work has three main thrusts: (i) cell and biologic therapies for the healing of large bone and muscle defects, (ii) multi-scale mechanical regulation of bone regeneration, (iii) intra-articular therapeutic delivery for post-traumatic osteoarthritis. Building upon my experiences and combining my background in mechanical engineering, vascular biology and musculoskeletal tissue regeneration, my research has integrated mechanics principles and analytical tools with molecular biology techniques to uniquely address challenges of musculoskeletal disease and regeneration.
Relevance to VA:	The overall objective of my work is to develop novel tissue engineered therapies for muscle defects and improve the physical rehabilitation methods used for treating complex musculoskeletal injuries. Severe extremity trauma is the most common combat injury for armed forces members and after such an injury patients face a poor prognosis for long term functional recovery. These injuries result in a significant cost to the hospitals and on the DOD and VA medical systems. As a secondary project I work on regenerative therapies for osteoarthritis. Post-traumatic osteoarthritis and early onset osteoarthritis is a condition commonly treated at VA hospitals by physical medicine and rehabilitation doctors.