Ashley L Bui et al., Orthop Muscular Syst 2015, 4:4
http://dx.doi.org/10.4172/2161-0533.S1.022

OMICS International
conferenceseries.com

International Conference and Expo on
Biomechanics & Implant Design
July 27-29, 2015 Orlando, USA

Cellular printing of skeletal muscle and neurons for bio-MEMS applications

Ashley L Bui, Michael A Lopez, Muhaimeen Hossain and **James J Hickman**
University of Central Florida, USA

Biological micro electromechanical systems (bio-MEMS) have been engineered to replicate animal and human tissue in order to develop body-on-a-chip systems. These models are beneficial for drug development by allowing a non-invasive acquisition of cellular electrophysiological response as well as reducing ethical concerns found in traditional animal and human trials. As these systems become smaller and more intricate, the accurate positioning of droplets containing biological components onto bio-MEMS becomes more difficult. The use of a cellular bioprinter allows the user to quickly deposit micro droplets with high precision. Multiple cell types are also easily printed onto a single microchip enabling integrated cell studies. We have optimized the printing process to reliably print skeletal muscle and neurons onto silicon-based bio-MEMS for the development of *in vitro* tissue platforms to study various physiological disorders.

abui830@knights.ucf.edu

Notes: