

Anthropometric Assessment of the da Vinci Surgical Robot

Matt Marshall, PhD
Associate Professor, Industrial and Systems Engineering, RIT

6:00 pm - 8:00 pm Light meal provided

A Meeting of the Western New York Chapter of the Human Factors and Ergonomics Society

Sponsored by Usability Associates, LLC

Location

RIT Building 9 Room 2139 (James E. Gleason Building) Park in Lot J or F.

See campus map at <http://facilities.rit.edu/campus/maps/general/RIT-CAMPUS%2024X36.pdf>

Abstract

The use of surgical robots has significantly enhanced the surgeon's control and visualization during minimally invasive surgery. In turn, these technological advances have translated into significant benefits to the patients compared to traditional laparoscopic techniques. However, use of surgical robots requires that surgeons sit for extended periods at a surgical console from which they control the robotic arms and view the surgical procedure through a high resolution viewer. This can lead to sustained trunk and neck flexion, resulting in discomfort in those regions. The system was analyzed through observational assessment and anthropometric modeling. The results of the analysis indicate that the current adjustability of the da Vinci console is sufficient for a large majority of the population, but individuals shorter than 60" or taller than 72" face challenges in using the system.

Bio

Matt is an Associate Professor in the Department of Industrial and Systems Engineering at RIT, where he has been a faculty member since November, 2001. He received his Ph.D. in Industrial and Operations Engineering from the University of Michigan in 2002. At RIT, Matt teaches courses in human factors, ergonomics, statistical quality control, and engineering economy.

Matt's research interests focus on the biomechanics of the upper extremities. He has worked with a variety of industrial sponsors to address research pertaining to the design of industrial and consumer products and the effects of these designs on their ergonomics and usability. Through grants received from the New York State Department of Labor and the Occupational Safety and Health Administration, Matt has been involved in working with manufacturing and service industries in central and western New York to improve workplace ergonomics and safety. Matt also conducts research on the biomechanics of sign language interpreting.

COST: Members & Students – no cost; Non-members - \$5 payable at the door

RSVP: Contact Mark Johnson by March 28 , MDJohnson62@gmail.com