NORTHWESTERN UNIVERSITY

Capabilities

Communicating the Science of Prosthetics and Orthotics

Volume 20, Number 3, Summer 2012

The 2012 and 2006 NUPOC State of the Science Survey Results

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As part of the **Rehabilitation Engineering Research Center (RERC) for Prosthetics and Orthotics** that is funded by the **National Institute on Disability and Rehabilitation Research** (NIDRR), the **Northwestern University Prosthetics-Orthotics Center** (NUPOC) is required to conduct a State of the Science Meeting (SOS). The goal of this meeting is to assess the state of research and explore new directions for research in the field of prosthetics and orthotics. In February 2006, NUPOC held a prior State of the Science meeting that was preceded by an online survey of the broader prosthetics and orthotics community. The information gathered from these activities was compiled in a report that has garnered attention from other researchers when substantiating research endeavors[1-7]. [The 2006 SOS Report is available at: www.nupoc.northwestern.edu/news-publications/papers/sos_reports/SOS_2006report.pdf]

In anticipation of our next State of the Science meeting that will be held later in 2012, we again surveyed the orthotics and prosthetics community. The 2012 survey was advertised on the *oandp-l* and *amp-l* list servers and it was available online from January 29 to March 11, 2012.

Many of the questions on the 2012 survey were similar to those administered in 2006. Analyzing and comparing the results of the two surveys provides insight into changes in the perception of prosthetics and orthotics research that may have occurred during the intervening years. Ideally, the results of these surveys will help generate discussion and formulate recommendations for ongoing discourse regarding clinically-relevant areas of research in prosthetics and orthotics.

The 2012 NUPOC SOS Survey attracted more responses than in 2006 (377 in 2012 vs. 224 in 2006). The increase in number of respondents was likely due to an increase in the number of persons subscribed to the *oandp-l* list server in 2012 (5,462 in 2012 vs. 3300 in 2006). Demographic data suggest that the two cohorts were very similar, with the majority of respondents between 30 and 59 years of age (78% in 2012 vs. 67% in 2006) and their self identification as certified prosthetists, orthotists or prosthetist/orthotists (60% in 2012 vs. 67% in 2006) (Figure 1).

The majority of survey questions focused on respondents' opinions of different aspects of prosthetics

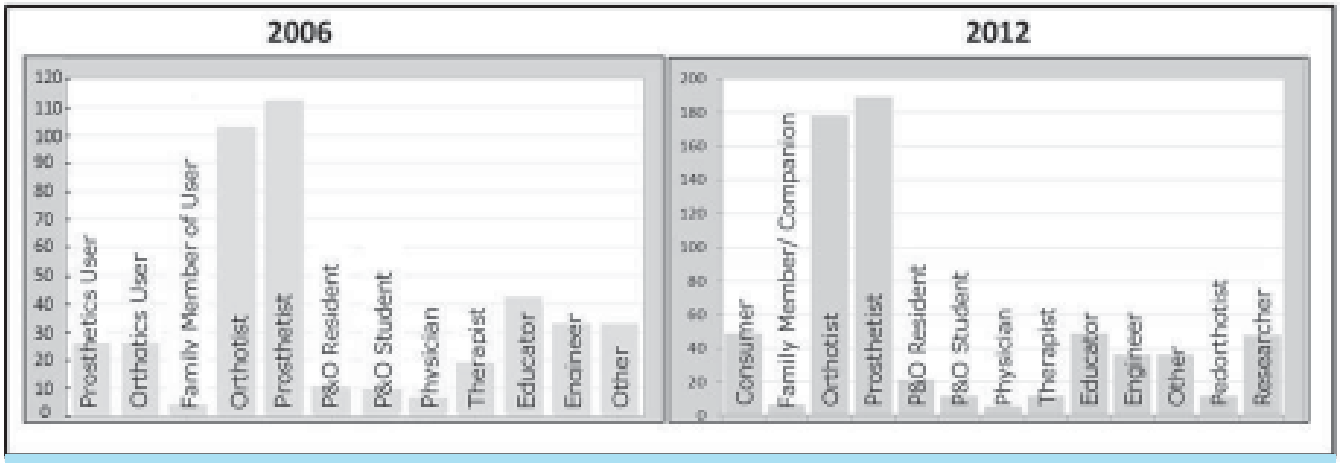

Figure 1: These bar graphs illustrate the number of respondents and their association with P&O in 2006 and 2012. Note that the majority of the respondents fall into the categories of either prosthetist or orthotist.

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and orthotics research. The proportion of respondents who thought that research was important was largely unchanged (93.4% in 2012 vs. 98.2% in 2006). However, the proportion of respondents who believed that the *amount* of prosthetics and orthotics research was lacking decreased to 62.1% in 2012 from 79.9% in 2006. Similarly, the proportion of respondents who thought that the *emphasis* of prosthetics and orthotics research was lacking decreased (45.0% in 2012 vs. 61.2% in 2006). Taken together, these results suggest that perceptions about the *amount* and *appropriateness* of research that is focused on prosthetics and orthotics have improved over the last five years.

The 2012 survey showed an improved perception about the availability of research funding: 53.7% of 2012 respondents believe that insufficient funding prevents research in prosthetics and orthotics compared to 74.6% of the 2006 respondents.

In contrast, the number of respondents who indicated that they had not participated in or conducted research increased (68% in 2012 vs. 54% in 2006). More than 75% of respondents in both cohorts answered "yes" when asked if they could identify areas where research is needed but lacked the ability or resources to carry out that research (Figure 2). In general, funding may not be viewed as limiting prosthetics and orthotics research; however, other factors seem to be constraining the amount of research conducted by certified prosthetists and orthotists.

When asked to rank the top five areas where research should be directed, the two surveys identified the most important research topics almost identically. For both prosthetics and orthotics, *outcome measures* were identified as the most important category needing future research. In both the 2012 and 2006 surveys, other top orthotics research categories were *ankle foot orthoses* and *fabrication/materials*; while the top prosthetics research categories were *socket/interface* and *control of the prosthesis*.

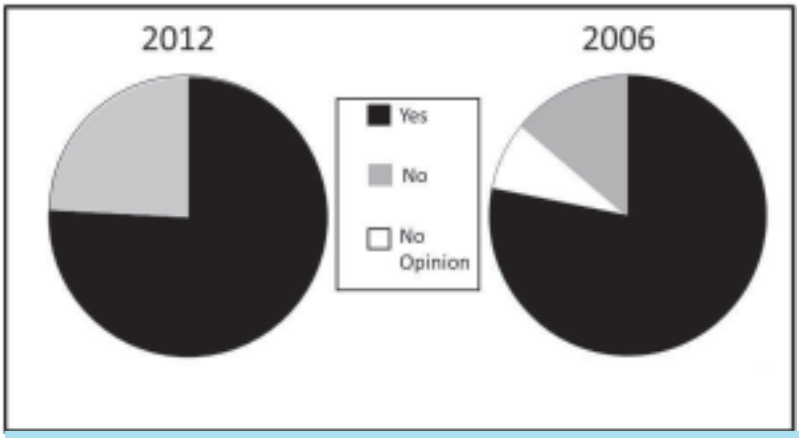

Figure 2: These pie charts indicate the number of respondents that answered "yes" when asked if they could identify areas where research was needed but lacked the ability/resources to conduct the research.

A comparison of the 2012 and 2006 SOS surveys provides insight into areas of prosthetics and orthotics that are perceived to need additional research, as well as changes in the perceptions about research that have occurred over the last five years. The 2012 NUPOC SOS Survey posed some additional questions that asked respondents to indicate their level of agreement to a series of statements relating to prosthetics and orthotics. Analysis of these additional questions will help craft continuing dialogue with regard to clinically-relevant areas of research in prosthetics and orthotics.

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ISSN 1055-7156
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James Schweitzer: 2012 NURERC Research Scholar

R. J. Garrick, PhD

James Schweitzer
2012 NURERC Scholar

James Schweitzer is the **Northwestern University Rehabilitation Engineering Research Center (NURERC) Scholar** for 2012. Established during the 1998-2003 NIDRR-funded grant cycle, the NURERC Scholar program is modeled after the **National Institute on Disability and Rehabilitation Research (NIDRR) Scholar Program**. The NURERC Scholar Program actively recruits persons with disability, enables them to become involved in rehabilitation research projects at NURERC, and encourages them to pursue career work in rehabilitation research.

At NUPOC, Mr. Schweitzer is assisting with NIDRR-funded RERC research projects, concentrating on the analysis, comparison and thematic presentation of data from **2012 and 2006 NUPOC State of the Science Surveys**. He is working collaboratively with **Stefania Fatone**, PhD, BPO(Hons), and other NURERC researchers and educators, to interpret these data to help guide discussion and contribute to future P&O research.

Mr. Schweitzer will complete his Bachelor's of Science in Kinesiology (2013) at DePauw University (Greencastle, IN) and plans to pursue a Master's in Prosthetics and Orthotics (MPO). A lifelong user of lower limb prostheses, Mr. Schweitzer has both a client-user perspective and a burgeoning professional perspective on the functional design and durability of prosthetic legs and ankle-foot systems. An avid sportsman, he played baseball, football, and basketball into college; coached a high school JV summer baseball team, and taught pitching and baseball skills. Mr. Schweitzer said, *"When I played sports competitively, I used to carry two extra prosthetic feet in my backpack. I've broken almost every kind of prosthetic foot available."* In college, he chaired a committee that helped develop an on-campus philanthropy week for ALS.

A native of Loveland, CO, Mr. Schweitzer is a member of the National Society of Collegiate Scholars, a recipient of a McKee Medical Center Scholarship, and the Denver Post's Dick Connor Adversity Conquered through Excellence Award. Prior to his NURERC Scholarship, Mr. Schweitzer interned at a prosthetics facility where he shadowed prosthetists, assisted with casting and modifications, and wrote about his experience.

Learn more about these Scholar Programs at: www.nupoc.northwestern.edu/research/NIDRR_RERC/nu_rerc_scholars.html.