

UT SOUTHWESTERN
THE UNIVERSITY OF TEXAS
SOUTHWESTERN MEDICAL CENTER
AT DALLAS

Prosthetics-Orthotics

12/19/2011

Thomas F. Fise, J.D.
Executive Director
American Orthotic & Prosthetic Association
330 John Carlyle Street, Suite 200, Alexandria, VA 22314
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Dear Mr. Thomas Fise,


Enclosed please find the final report on the funded project titled "Investigation of prosthetic socket interface pressure: effects of suspension types and socket alignment".

We would like to thank AOPA for supporting this small research project. Also we would like to thank you and AOPA for offering us a no-cost extension which provides us sufficient time to get the project accomplished.

We have followed the proposed protocol and recruited ten unilateral transtibial amputees. However, due to the schedule and limited population of transfemoral amputees who are using locking pin liners, we decided to focus on transtibial amputees. During the study, we used F-socket pressure sensor to register socket interface pressure and we use GAITRite to register spatiotemporal gait information. Currently, we are analyzing the data. We plan to submit the results for publication in the near future. Also we will consider using the pilot data to develop full proposals targeting federal agencies such as NIH, NIDRR and NSF. It is expected that the outcome from this study will be useful for providing clinical recommendation.

Once again, thank you very much for this generous support and please do not hesitate to contact me if you have further concerns.

Yours sincerely,



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PROJECT DESCRIPTION –SUMMARY

Where the work is being conducted?

The proposed study is conducted jointly at the research lab and the prosthetics & orthotics clinic at the University of Texas Southwestern Medical Center. The research lab has 200 square feet open space and is equipped with F-scan system, Delsys EMG system, motion sensors and a portable ultrasound machine. The research lab is also equipped with two powerful Dell computers dedicated to data acquisition and processing. Dr. Gao has independent office space on UTSW campus. In addition, there is a machine shop next to the lab for parts fabrication.

Who are the participants?

The key personnel of the proposed study include Fan Gao, PhD (PI) and Susan Kapp, MEd, CPO, LPO, FAAOP (co-I). Ten unilateral transtibial amputees are recruited to participate in the study.

What progress has been made to date and what work remains until the project due date?

We have accomplished the following: recruitment of ten unilateral transtibial amputees, lab testing using GAITRite and F-socket pressure sensor. The subjects are recruited from the P&O clinic which is located next to the research lab.

Summary of the Final report (12 months):

- *Please indicate what percent of the project you estimate has been completed.*

100%

- *Please identify any significant changes from the original research plan.*

Due to the schedule and limited population of transfemoral amputees who are using locking pin liners, we decided to focus on transtibial amputees.

- *Please describe any significant changes that have occurred, as noted above, or any anticipated changes that represent significant deviation from the original plan.*

Briefly discuss the reason(s) for the changes and the implications

Due to the schedule and limited population of transfemoral amputees who are using locking pin liners, we decided to focus on transtibial amputees.

- *Expenditures: if you have a low rate of expenditures this fiscal period, please provide a brief explanation.*

Expenditures are as proposed and mainly used for purchasing F-socket pressure sensors, related lab accessories and subject fee.

- *Please list all publication resulting from this Award*

Data analysis is underway and the results will be submitted for publication in the near future.