Investigation of advanced body measurement in chemotherapy dosing and service development.

Lead supervisor: Dr Michael Thelwell

Co-supervisor(s): Dr Alice Bullas

Research Centre or Department: Sport & Physical Activity Research Centre / Sports Engineering Research Group

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Project summary

Currently within chemotherapy, estimates of a patient's body surface area (BSA) obtained using simple body measures – height and weight - are used to calculate drug dosages. However, the accuracy of BSA for calculating dosage has been heavily criticised in previous literature, potentially reducing the effectiveness of treatment for patients with atypical body types. Three-dimensional (3D) surface imaging and advanced body measurement techniques can provide oncology practitioners with improved tools for prescribing chemotherapy dosages that are valid for individuals, regardless of their body type. The Morphology Research Theme within the Sports Engineering Research Group at the AWRC are conducting a programme of research to address this issue and develop methods for determining optimised chemotherapy dosages for patients receiving treatment for cancer. In addition, the theme is also developing a commercial offering called the 'Advanced Human Body Measurement' service. This service will open the laboratory and our expertise to members of the public, sports clubs and weight loss groups, enabling them to benefit from advanced body measurement techniques, for example monitoring changes to their body following a weight loss programme.

We are seeking an intern to contribute to the work of the Morphology Research Theme in the following areas:

- Research into improved methods of chemotherapy dose prescription
    - Recruitment and scheduling of research participants.
    - Assist in ongoing data collection, involving 3D scanning and body composition measurement of research participants.
    - Assist in retrospective analysis of a historical health dataset investigating rates of dose reductions for patients with early breast cancer.
    - Assist in drafting a research publication based on findings of retrospective analysis.
- Development of the 'Advanced Human Body Measurement' service
    - Conduct market research of other companies offering similar services.
    - Consider the logistics of delivering a service within the AWRC.
    - Collect data on user feedback of the service.
    - Research appropriate timings and costings for the service.
    - Develop marketing materials for the service.

Specific skills and experience required for this project

Please also refer to the advert on our jobs pages for the person specification for these internships

We are looking for candidates that have experience of working with the public and/or research participants. The applicant should be proactive and have experience of working independently. An interest in health and wellbeing research and the area of health assessment is desirable. If you have experience of data processing or working with large datasets this is desirable but not essential. We will cater to the skills, experience and desires of the successful candidate.

Project location

Advanced Wellbeing Research Centre (AWRC)

Home working may be available

Project delivery

This project can be completed either on a full-time or a part-time basis depending on the intern's preference/availability. If completed on a part-time basis we would require the student to be available a minimum of 2 days per week.