

## Final Project Report for WSI Stimulus Fund

**Project Title:** Intervention mechanism for supporting of Asthma sufferers

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### Summary of Activities to date

With reference to the original project specification, we have reached several milestones including the development of a cross-platform mobile application (Android and iOS), an extensive literature review of the current research activities associated with the combination of personal data and biological data for Asthma research. We have also applied for ethical approval for the user trials (to be completed), and currently developing the analytical toolkit required to interpret the data collected from the mobile application.

**Data + Ethical Approval.** An ethics application for the user studies has been submitted and waiting for approval. There has been some changes with regards to the use of data, as we will not be using UBIOPRED during the initial analysis. For the first phase, we will use only user generated data from the mobile phone, and environmental data, which will provide insight into the correlation of environmental data and the severity of a patient's asthma condition. In phase two we will seek ethical approval to combine data collected during the UBIOPRED study,

**Literature Review.** We have worked with demonstrators to perform an extensive literature review (attached) of the current studies and experiments concerned with using wellbeing and lifestyle data collected from smart phone and Web applications for helping Asthma sufferers. The literature review covered research conducted within the computational and health sciences, and also includes ongoing studies led by industry and government schemes. The output of this work is a 3-page survey which we will use to support any publications which are produced from this project, as well as further proposals.

**App Development.** We have completed development of the cross-platform mobile phone application, which is being build using an existing platform within the University of Southampton (UBehave). We have aligned the development of the application with an existing research project on Asthma (Breathe Easy), which uses a Web portal to ask Asthma sufferers to answer a series of questions which report their current/daily state of wellbeing. These questions have been integrated into our application, as they are based on experiments conducted by behavioural psychologists.

The mobile application can be currently downloaded from the Android Play store here:

<https://play.google.com/store/apps/details?id=ac.soton.breatheasy&hl=en>

We have also deployed a dedicated cloud service to capture all the data from the different user trials, which is available via <http://asthma.cloudapp.net>

**Testing and User Trials.** The initial testing and user trials have already been initiated. Testing of the mobile phone application are currently ongoing to ensure that the data being collected supports the intended analysis. Following the testing, we intend to conduct a 1-month user trial with a small cohort of Southampton University students (but not limited to). The data collected during this trial will then be used to perform phase one of the data analytics described in the original project report.

**External Collaborators and Funding.** As described in the mid-term report, we have been in contact with AsthmaUK to inform them on our progress, and they have been advising us with regards to the development of the smart phone application, and what features we should consider in order to align our project with their ongoing research and collaborations with other research labs

### Future Activities.

The immediate future activities will include the mobile phone user trials (to be conducted within the next month), and the development of the analytics toolkit. We are also waiting for ethics approval to complete the user study. Finally, we will be seeking additional funding opportunities, using the end of project draft proposal,

### Total Budget

Item	Cost	
Conference Fees	£623.47	
Travel	£1,242.51	
Literature Review	£294.00	
Virtual Machines + Equip.	£1,498.58	
Application Development	£1,801.50	
	<b>Total</b>	<b>£5,352.74</b>

