2016 YCCSA SUMMER SCHOLARSHIP PROJECT SUBMISSION

This form is for prospective project supervisors to submit their projects to be included in the YCCSA Summer Scholarships Programme for 2016.

It is the purpose of the Summer School that any projects submitted are interdisciplinary in nature.

Date	7 December 2015
Supervisors' Names and Departments	Angelika Sebald, Chemistry Susan Stepney, Computer Science David Mitchell, Bradford Institute for Health Research/Bradford Teaching Hospitals/Calderdale and Huddersfield Hospitals/British Journal of Oral & Maxillofacial Surgery
Project Title	A magic self-assessment triangle
Project Description	Many head & neck cancer patients survive their disease, but then have to live with the often severe and life-long consequences of both the disease and the treatment(s). Usually these patients suffer from a rather wide range of difficulties, and long-term aftercare is crucially important. Patients' problems and issues change over time, so it is important for clinicians to have up-to-date information about the issues that are important to each individual patient. Generically this is known as "Quality of Life" research. The current means to obtain such information is to ask patients, repeatedly, to fill in questionnaires, and to assign severity of problems on a scale of 1 to 4,5 or 10. There are a range of variants on this "Likert scale" approach. Many patients find this cumbersome, develop 'questionnaire fatigue', and eventually disengage. This project will develop an intuitive, questionnaire-avoiding, yet fully quantifiable approach to self-assessment (and reflection) of patients suffering from a number of problems simultaneously. We will exploit a graphical representation in the form of ternary graphs [1] for this purpose. Ternary graphs are widely used for the quantitative characterisation of properties of composite systems in chemistry and materials science (where they are called phase diagrams), and also have been applied in economics, but to the best of our knowledge have not been used for clinical purposes. The project will implement an open-source application of ternary graphs for patient self-assessment, including options for automated statistical analysis of cohort data and trajectories over time.
Required Skills	This project is suitable for a student with expertise and interest in design and implementation of applications for users with limited computer literacy. Cooperation with a highly interdisciplinary team is a necessary pre-requisite and willingness and ability to interact with patient groups at their level for their feedback is important.
Project Dates	The project will start on Monday, 11 July 2016 und finish on Friday, 9 September 2016.

Other Information	A small group of patients already consented for participation in an existing long term patient centred research project for piloting the project.
References	[1] https://en.wikipedia.org/wiki/Ternary_plot

When complete, please email the form to sarah.christmas@york.ac.uk