2018 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 2018.

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

Date	*16 January 2018*
Supervisors' Names and Departments / Affiliation and Contact Email	Angelika Sebald, YCCSA and Dept. of Chemistry David Mitchell, YCCSA Aneurin Kennerley, Dept. of Chemistry and CHyM Lauren Tomasello, Dept. of Electronic Engineering angelika.sebald@york.ac.uk david.mitchell@york-ac-uk aneurin.kennerley@york.ac.uk lt696@york.ac.uk
Project Title	Everything you always wanted to explain about the physics of medical imaging methods* (*but were afraid to try)
Project Description	We are building a comprehensive and fully validated website with information for maxillofacial patients (many of whom are head & neck cancer patients), carers and professionals – maxfacts.uk. Maxfacts is a multidisciplinary project including medical and scientific expertise, web design and usability / accessibility aspects, media provision. All information on maxfacts.uk is provided in several levels of breadth/depth of information: level1 – short and easy to read; level2 – slightly more technical and more content, jargon explained; level3 – expert level, including language. We use many different ways to provide information: text based (different levels), integrated with graphics and photographs, video material. The general theme of the physical principles of a whole range of imaging techniques used for clinical purposes (MRI, CT, PET, ultrasound), as well as image reconstruction and simulation methods, 3D printing techniques and similar techniques (relevant for radiotherapy, reconstructive surgery and restorative dentistry) will benefit enormously from an additional far more in-depth discussion and appropriate explanation than is possible and reasonable within the regular level 1,2,3,structure of information provision on maxfacts.uk. Our website architecture allows for additional spin-out pages to be accommodated for such purposes (for example, we have such additional pages about texture modification of foods). Such in-depth research, discussion and explanation, in addition to the 'normal' information provision on the website, is required because of the rapid technological and scientific developments in that area. As far as the physics (and maths) of imaging techniques are concerned, this is as much about future-proofing a comprehensive information resource for a wide range of users, maxfacts.uk, as it is about making an effort to properly explain hard-core science to mostly non-scientists – empowering patients and carers.
Required Skills	Expertise and sound understanding of the physics underpinning all the techniques mentioned; an interest in science and medical science communication by electronic tools and in developing such platforms. Willingness to interact with interdisciplinary team and to obtain feedback from users, including patients
Supervision and Collaboration Arrangements	All supervisors will play an active part in regular project supervision, with Sebald and Kennerley taking responsibility for day-to-day activities.
Project Dates	*The summer school runs for 9 weeks, starting on Monday, 09 July 2018 and finishing on*

	Friday, 07 September 2018.
Other Information	*Anything that doesn't easily fit above.*
References	*https://maxfacts.uk/* The making and working of a novel resource for patients, carers and professionals – maxfacts.uk. D.A.Mitchell, A.Sebald and L.Tomasello; *Br. J. Oral and Maxillofac. Surgery*; **56**, 14-18 (2018). Code https://github.com/laurenkt/maxfacts The ternary graph as a questionnaire – a new approach to Quality of Life assessment? R.Brown, L.Tomasello, D.A.Mitchell, A.Sebald and S.Stepney; *Br. J. Oral and Maxillofac. Surgery*; **55**, 679-684 (2017). Code https://github.com/laurenkt/magic-triangle and tool https://laurenkt.github.io/magic-triangle/

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