



## 2015 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 2015.

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

<b>Date</b>	<i>7<sup>th</sup> January 2015</i>
<b>Main Supervisor's Name</b>	<i>Dr Helena Daffern</i>
<b>Main Supervisor's Department</b>	<i>Electronics</i>
<b>Co-supervisors' name(s) and Departments</b>	<i>Dr Gavin Kearney, TFTV Dr Jude Brereton, Electronics Dr Damian Murphy, Electronics (on sabbatical until Oct 2015 but part of the larger project)</i>
<b>Project Title</b>	<i>Changing spaces: preserving the acoustic heritage of the York Theatre Royal</i>
<b>Project Description</b>	<p><i>The auditorium and stage area of York Theatre Royal are currently undergoing significant alterations to allow the theatre to adapt to the changing modern culture of the performing arts, and particularly theatre. This interdisciplinary project, crossing the boundaries between acoustic engineering and performance arts, will use recorded Impulse Response data collected from the existing auditorium (which has existed in its current form since the early 1900s) to analyse the room acoustic parameters of that performance space and create auralisations of different performance types (e.g. speaking, singing, instrumental music).</i></p> <p><i>The intern will combine existing processing techniques to address the specific problem of the intricate space of York Theatre Royal and the multiple and varied audience positions. A large data set of diverse room acoustic parameters will be built to allow their complex and correlations to be scrutinized, investigating the interactions and dependencies within them. From this, the effectiveness of the space from an acoustic standpoint and how this impacts the culture of performance practice in theatre will be considered. This will later be compared to the new auditorium, comparing the progression of the new theatre space with the preserved acoustic from the old site.</i></p>
<b>Required skills</b>	<p><i>The student needs to be competent in:</i></p> <ul style="list-style-type: none"> <li>• <i>An audio editing programme (e.g. Audacity, ODEON)</i></li> <li>• <i>MATLAB</i></li> </ul> <p><i>Good knowledge of:</i></p> <ul style="list-style-type: none"> <li>• <i>Room acoustics</i></li> <li>• <i>Recording techniques</i></li> </ul> <p><i>Some knowledge of:</i></p> <ul style="list-style-type: none"> <li>• <i>Auralisation</i></li> </ul>
<b>Project dates</b>	<i>To create a cohort of students who can work and learn together, ideally all projects would</i>

	<i>run for 9 weeks, starting on Monday, 13 July 2015 and finishing on Friday, 11 September 2015. If you have any special requirements regarding the dates of your project, please indicate these here.</i>
<b>Other information</b>	<i>Anything that doesn't easily fit above.</i>
<b>References</b>	<p><i>Please include at least one relevant journal reference.</i></p> <p><b>Room Impulse Response Synthesis and Validation Using A Hybrid Acoustic Model.</b> / Southern, Alexander Paul; Siltanen, Samuel; Murphy, Damian Thomas; Savioja, Lauri. In: IEEE Transactions On Audio Speech And Language Processing, Vol. 21, No. 9, 6516012, 2013, p. 1940-1952.</p> <p><b>The Application of Impulse Response Measurements Techniques to the Study of the Acoustics of Stonegate, a Performance Space Used in Medieval English Drama.</b> / Lopez, Mariana Julieta; Pauletto, Sandra; Kearney, Gavin. In: Acta Acustica united with Acustica, Vol. 99, No. 1, 01.2013, p. 98-109.</p> <p><b>Acoustic quality of theatres: correlations between experimental measures and subjective evaluations.</b> Farina, Angelo. In: Applied acoustics 62.8 (2001): 889-916.</p>

When complete, please email the form to [sarah.christmas@york.ac.uk](mailto:sarah.christmas@york.ac.uk)