

Fully Funded Studentship:

An optimised system for Multispectral Imaging of Documentary Material

UCL Medical Physics and Biomedical Engineering and UCL Centre for Digital Humanities are interested in multispectral imaging of documents to enhance the reading of lost text, corrections and watermarks. In this project, you will characterise and validate multispectral imaging for use in the cultural and heritage sectors.

Research questions

- *What is the optimal way to acquire and analyse multispectral imaging data of archival material?*
- *Does a single optimal approach exist, or are bespoke approaches for different challenges required?*
- *How can we optimise the process so that archives and libraries can acquire multispectral images without input from specialist imaging scientists?*

This cross-disciplinary project applies multispectral imaging techniques to the emerging field of digital humanities. You will develop and characterise image acquisition and analysis techniques to reveal features on the manuscripts that are not visible to the naked eye. You will then optimise these techniques for different substrates, inks and materials before developing standards for capture or processing multispectral imaging in libraries, archives, galleries and museums. These standards do not currently exist.

You will work with conservators and archivists from the British Library and London Metropolitan Archives, and with industry specialists, RB Toth Associates. Effective multispectral imaging includes not just the collection of quality images, but also the ability to manage and exploit large amounts of integrated data and metadata, which provides additional opportunities for research. This could include images or data collected with other modalities, including X-ray fluorescence (XRF) and Fourier transform-infrared (FT-IR) spectrometers.

The ideal student will have experience and qualifications in areas such as maths, computer programming, and practical lab skills; they will be curious with an enthusiasm for open-ended problem-solving in new, challenging areas, and have an interest in museums, historical manuscripts and heritage artefacts. However, we are open to applications from interested students with other backgrounds, so please contact Adam Gibson (adam.gibson@ucl.ac.uk) or Melissa Terras (m.terras@ucl.ac.uk), the academic supervisors, if you are excited by this studentship.

The project is part of the EPSRC Centre for Doctoral Training in Science and Engineering in Arts, Heritage and Archaeology (www.seaha-cdt.ac.uk). SEAHA students are involved in activities ranging from residential events and group projects, to conferences and careers events. The SEAHA Studentship will cover home fees and a stipend of up to £16,726 per year (current rate) for eligible applicants (<http://www.seaha-cdt.ac.uk/opportunities/eligibility-criteria/>) and a substantial budget for research, travel, and cohort activities.

Your application should include:

- A substantial covering letter (2-3 pages) clearly explaining your motivation for this project
- The UCL graduate application form which can be downloaded via UCL's web site: <http://www.ucl.ac.uk/prospective-students/graduate/apply/apply-now/ucl-graduateapplication-form.pdf>
- Two academic references

- A copy of your degree certificate(s) and transcript(s) of degree(s),
- Proof of meeting the UCL English language proficiency requirements where necessary. We require an advanced level certificate (<http://www.ucl.ac.uk/prospective-students/graduate/life/international>)
- A sample of academic writing. This may be a short research proposal (max. 2000 words) linked to this project or an article of similar length written for some other reason.

The supervisory team will be Adam Gibson and Melissa Terras (UCL), Mike Toth (RB Toth Associates) and Christina Duffy (British Library). The award will be subject to Grant Agreement between UCL, R B Toth Associates, British Library and London Metropolitan Archives.

Apply directly to the SEAHA Centre Manager: manager@seaha-cdt.ac.uk

Postal Address:

SEAHA Centre Manager
UCL Institute for Sustainable Heritage
The Bartlett School of Environment, Energy and Resources (BSEER)
4th Floor, Central House
14 Upper Woburn Place
London
WC1H 0NN

Application deadline: Midnight (GMT), 1st April 2015

UCL Taking Action For Equality.