

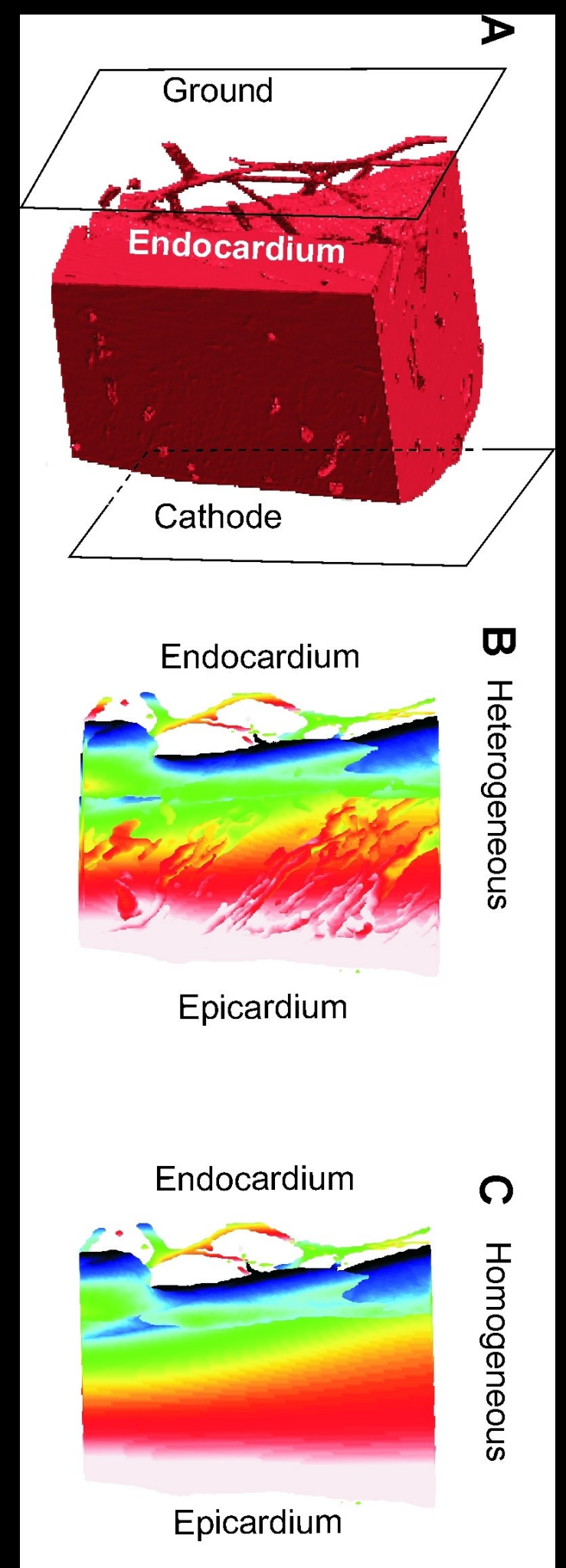


Understanding electrical defibrillation of the heart

Dr Blanca Rodriguez has been using the NGS since it first entered production in 2004, as part of the Integrative Biology Project.

By simulating the electrical activity in the ventricles of the heart and the application of an electrical shock to cardiac tissue, they are able to study how the heart tissue reacts. Dr Rodriguez is using the NGS simulate the application of electric shocks to both healthy and diseased hearts. Many simulations are run, with changes to length or strength of the shock. To obtain 250ms of animated data, 28 hours of processing time is required for each parameter. Using the NGS means that hundreds of simulations can take place sequentially, on many CPUs, something which she feels would not have been possible without the NGS.

Dr Blanca Rodriguez, University of Oxford



Development of a chemical properties database

The NGS has been working with researchers at the University of Southampton to develop methods of handling large quantities of data. Researchers have created a Resource Description Framework (RDF) triple store for chemical data. With the help of expertise from the NGS, they are now looking into whether the use of the Oracle 10.2 and 11G Databases can improve the speed of querying. The Oracle RDF data management capabilities of high query performance and triple loading capabilities means storing databases with 100 million triples is not a problem. Tools such as Oracle Jena are used for triple loading and storage.

Keiron Taylor, University of Southampton

Astronomy databases

GalaxyZoo is a project with over 100,000 volunteers from around the world visually classifying the galaxies imaged by the SDSS. Recently, Helen Xiang has succeeded in transferring almost 2 Terabytes of SDSS data to the NGS Oracle database in Manchester. A separate Microsoft SQL database at Portsmouth holds another 2 Terabytes of similar data. Joint queries on the two databases have been successfully run.

Helen Xiang adds "We are using OGSA-DQP now to implement astronomy queries on distributed SDSS data on NGS and in Portsmouth. We've had to change the code quite a bit to get it to work." Helen's research should give important insight into the design of massive distributed data systems .

Helen Xiang, University of Portsmouth.



To find out more about the NGS visit our website at www.ngs.ac.uk

