**Purdue TexGen Workshop Preliminary Agenda**

Dr Louise Brown

Morning

1. General overview of the TexGen project

* Downloading TexGen - where executables and code are stored
* Documentation - Wiki pages, examples on GitHub
* User forum
* Overview of where TexGen fits into the multi-scale modelling process
* Summary of software structure
* Future developments

2. An overview of the use of TexGen as a pre-processor for generating textile models

* Automatically generated 2D and 3D models and example of use for prediction of mechanical properties
* Use of µCT data to extract geometric trends for refinement of idealised model. Example of 3D orthogonal model and its use for prediction of permeability
* Generation of models for other types of textiles such as braids and knits
* Meshing functions and export

3. TexGen modelling theory and how this relates to the creation of TexGen models both using the graphical user interface (GUI) and Python scripting.

Afternoon Practical Session

4. Generation of 2D and 3D textiles using the automation provided by the weave wizards.

* 2D weave exercise
* 3D orthogonal weave exercise

5. Editing textiles using the graphical user interface (GUI).

6. Creating custom textiles using the GUI.

7. Introduction to the Python scripting API

* How to use Python commands to edit models from the TexGen Python console
* Creating scripts for custom textiles