

AbstractID: 7993 Title: Down and Dirty with DICOM. Using two powerful open source tools to use DICOM to aid in practice and research.

DICOM is the lingua franca of medical imaging. Having a working knowledge of how to perform troubleshooting and manage images in a clinical environment is a great asset to medical physicists. Two powerful open source tools will be demonstrated in this interactive session as a method to learn DICOM as well as learn clinical uses for these tools.

The first tool is the DICOM validation toolkit which is a framework that can be used for testing DICOM transfer syntaxes. We will use clinical examples of how the tool can be used to troubleshoot for common problems such as a misbehaving modality worklist association between an imaging modality and a PACS system. The framework has a scripting language that allows for easy access to the often complex binary association language of DICOM.

The second tool is the DICOM archive tool DCM4CHEE. This open source DICOM archive is a great application that can be used as the core of a research PACS, teaching, or testing archive. DCM4CHEE is fully IHE compliant and we will test its advanced integration capabilities using DVTK.

The course will summarize installation and operations of these toolsets through practical examples and interaction with the audience. These tools are light weight and attendees are encouraged to bring a laptop to the session for practice. A basic overview of DICOM will be provided in relation to the tools presented.

Educational Objectives:

1. Understand the DICOM validation toolkit (DVTK)
2. Learn how to use the DCM4CHEE DICOM archive