









### <sup>≜</sup>UCL

### An example from CT

- Spiral CT (trivial, easy, but very significant)
- Multi-slice (Mostly obvious, not trivial to develop)
- Photon counting CT (Can't be done on real systems yet)



# Methodology, including: Physics Mathematics and Statistics Informatics Engineering) Applications, including: Cancer Neuroscience Cardiovascular Infection (the -omics)













Some Examples ≜ <mark>UC</mark> L	
<ul> <li>Tumour staging         <ul> <li>Detection                 <ul> <li>segmentation</li> </ul> </li> <li>Measurement                 <ul> <li>volume</li> </ul> </li> <li>Description                 <ul> <li>staging</li> </ul> </li> </ul> </li> </ul>	<ul> <li>Microcalcifications         <ul> <li>Detection</li> <li>matched filter</li> <li>Measurement</li> <li>how many</li> <li>shape</li> <li>Description</li> </ul> </li> </ul>
• diagnostic strategy	• benign/ malignant

























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**Tracking of Change** 

- Over time for example CT lung nodules
- To monitor interventional therapy
- Response to therapy for example MS lesions
- Drug trials to observe targeting and physiological response as opposed to outcome











## Medical Image Processing Andrew Todd-Pokropek















## <section-header> Interventional Radiology Radiologist are becoming surgeons Increasingly important Some example Angioplasty Biopsy (breast etc) Computer Aided Surgery Micro-video capsules

















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![](_page_9_Picture_4.jpeg)

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