AbstractID: 2718 Title: Recent Advances in Digital Mammography

Purpose:
To familiarize the participants with new developments and applications related to digital mammography.

Method and Materials:
The ACRIN DMIST results are about to be released and it is expected that a benefit will be demonstrated in terms of the accuracy of digital mammography relative to film mammography. Further technical development in acquisition and display technology will improve the efficiency with which digital mammography can be performed. Additional and possibly larger benefits are likely to come from new applications, including computer-assisted detection and diagnosis (CAD), tomosynthesis, telemammography, contrast imaging, interventional procedures and risk assessment. These will all be made possible or facilitated by the precise acquisition of mammographic images in digital form. For example, CAD can improve the accuracy and consistency of mammographic interpretation by emulating a second reader. Telemammography can improve access to high-quality mammography in underserved areas. The problem of reduced accuracy due to the complexity of overlying fibroglandular tissue structures in the dense breast can be addressed by tomosynthesis, which simplifies the image by reconstructing individual tomographic slices. Alternatively, imaging of the effects of tumor angiogenesis can be accomplished by subtraction techniques using intravenous contrast media. This can not only improve conspicuity of lesions, but also better reveal the extent of disease. The risk of breast cancer is highly associated with mammographic density. By quantifying density, risk can be estimated and strategies for screening optimized. In the future, tracking of density may have a role in breast cancer prevention by providing a method for monitoring interventions designed to reduce risk.

Results:

Conclusion:
The benefits of digital mammography are likely to extend in several important directions.

Conflict of Interest (only if applicable):
Martin Yaffe's laboratory has collaborative research agreements with GE Healthcare and with Fischer Imaging on topics related to digital mammography. Dr. Yaffe also conducts research with R2 Technologies and is on the Scientific Advisory Board of XCounter and ART.