

Non Invasive Skin Cancer Therapy

Why it's desirable &
how OCT can enable its use

Dr Gordon McKenzie

Co-Founder and Director of Clinical Development
Michelson Diagnostics

 **VIVO SIGHT**



Introduction



■ Michelson Diagnostics Ltd.

- Founded March 2006 by five engineers / physicists
- Privately owned
- Funded by angel and VCT investors
- 15 staff in UK, Germany and USA

■ Dr Gordon McKenzie

- Co-Founder and Director of Clinical Development
- Engineer focused on biomedical optics and applications for last 13 years
- PhD from Warwick in Medical Laser Ablation

VivoSight OCT

‘Laser Ultrasound’

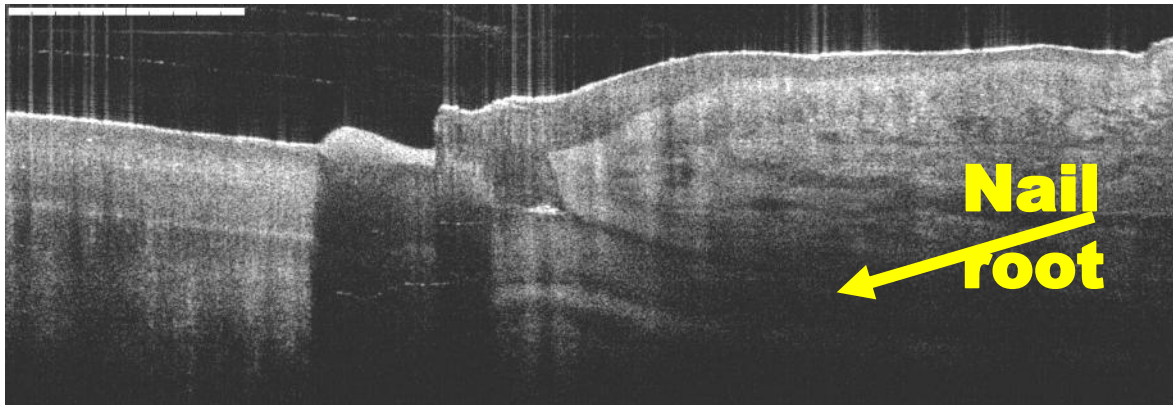


VivoSight OCT

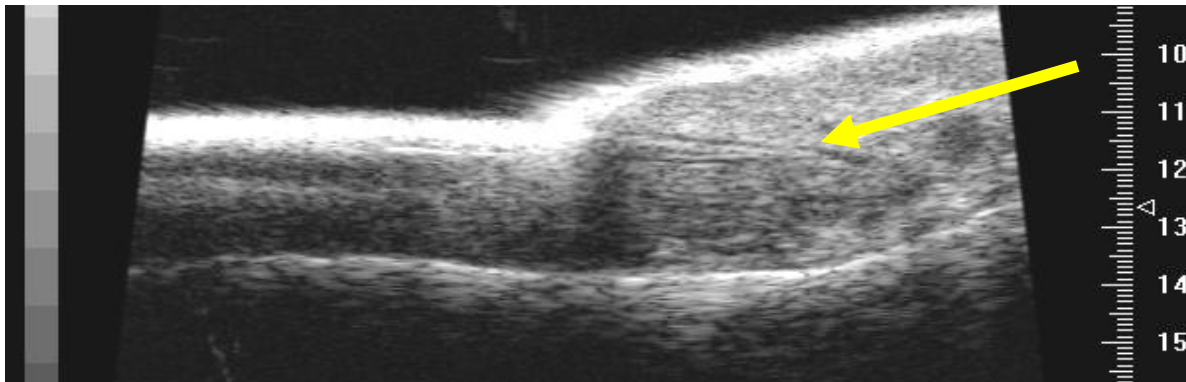
- Fourier domain OCT
- 10 kHz Swept source at 1,300 nm
- Multi-beam probe for increased performance
- 7.5 μm lateral resolution
- 10 μm axial resolution
- 2 mm depth penetration
- 2D or 3D
- Real time
- Non-invasive
- Non-ionising
- Medically cleared



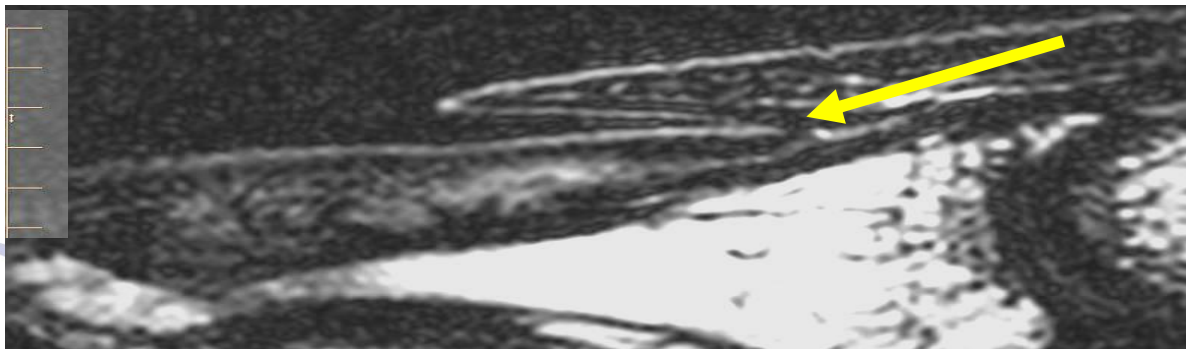
Fingernail – image comparison



Multi-Beam
OCT



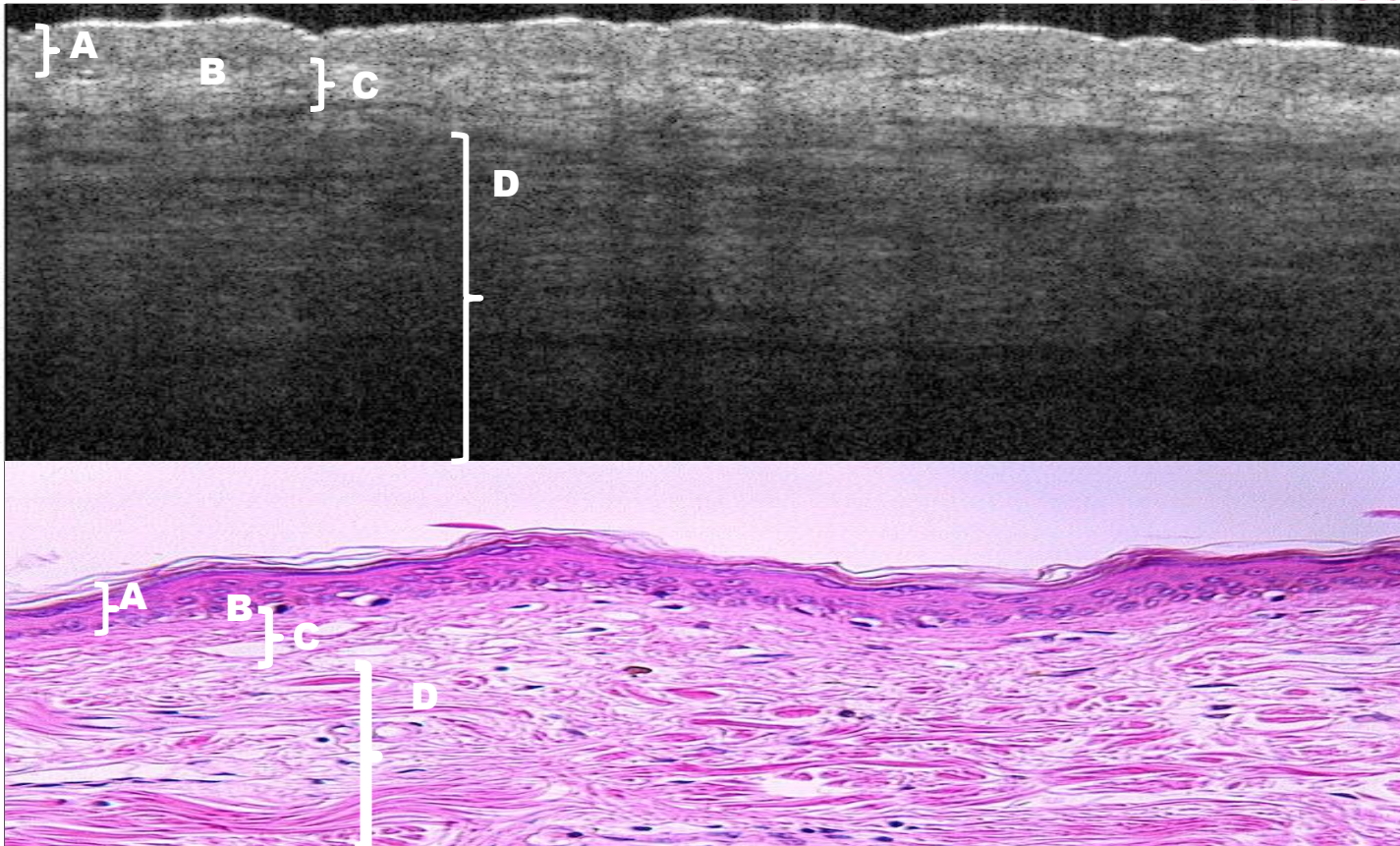
Ultrasound



MRI

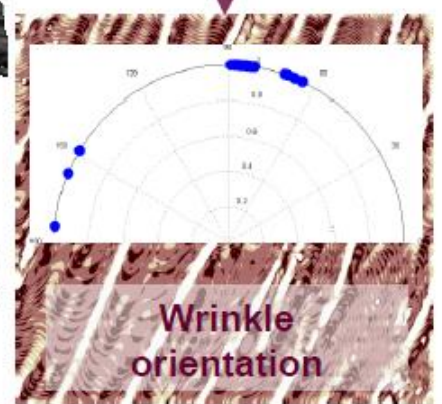
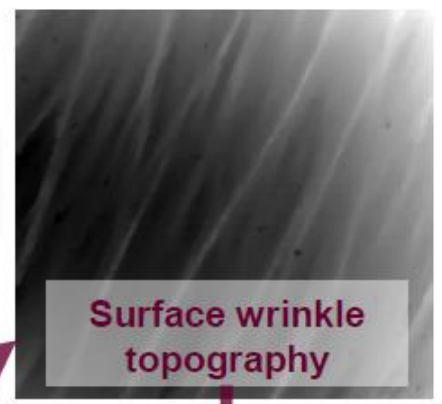
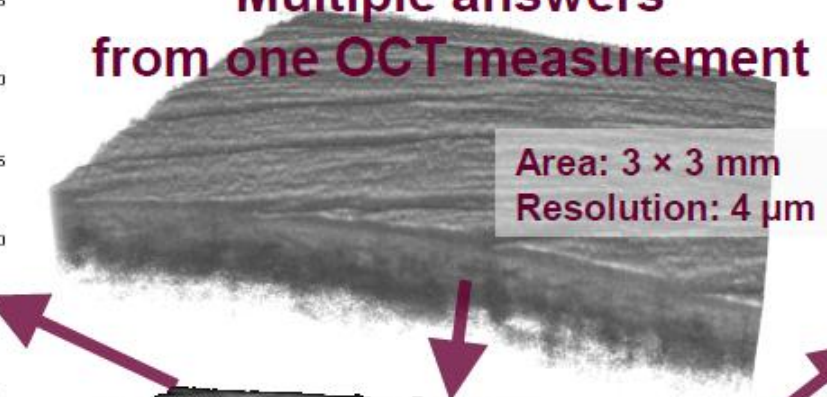
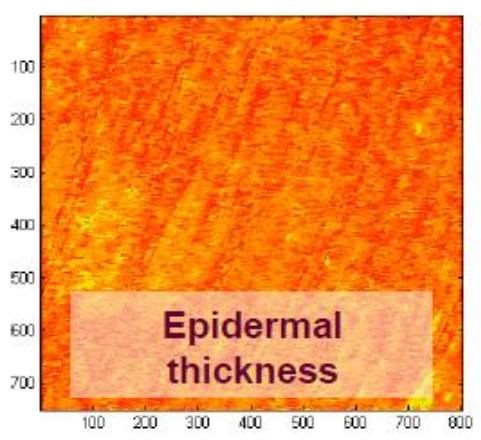
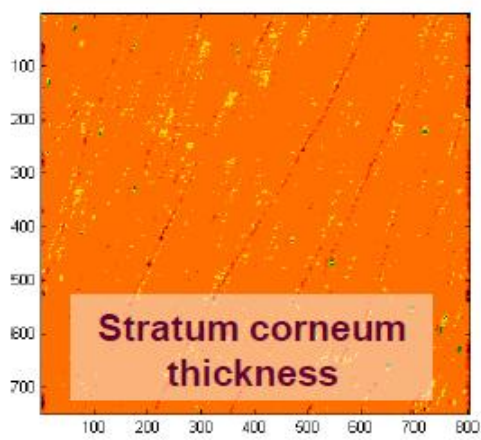
Images courtesy
Guys & St Thomas'
NHS Trust

Layers

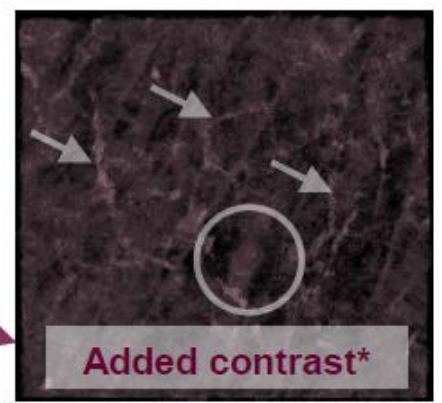


- **A: Epidermis**
- **B: Dermal-Epidermal Junction**
- **C: Papillary Dermis**
- **D: Reticular Dermis**

Multiple answers from one OCT measurement



Preference = ageing surrogate



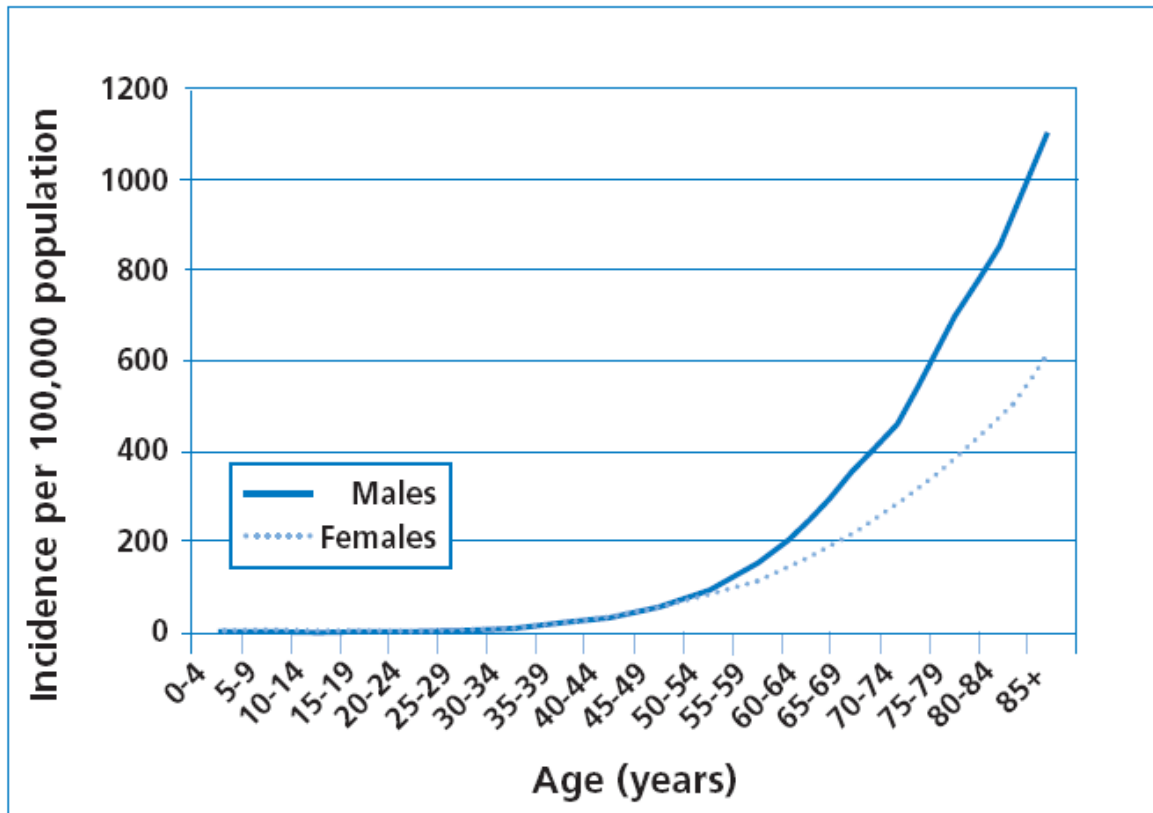
* Arrows: vessels. Circle: hair follicle

So what?



Market key facts - US

- Non-melanoma skin cancer is by far *the most common US cancer*
- 3.5M new cases annually in US, growing 4% p.a.
- A cancer of the white elderly population
- \$2BN+ spent annually treating non-melanoma skin cancer



incidence by age

Market need



**A skin
cancer**

Current standard of care:

***Visual assessment by dermatologist
then***

***Biopsy, which is analysed in external
lab***

Visual assessment is *inaccurate*

**Biopsy is *painful, scarring* and result is
*delayed***

**The whole process is *inefficient* and
*costly***

VivoSight benefits

Screening

- Visual

Detect more cancers, earlier

Diagnosis & Staging

- Visual / Biopsy

**Improve treatment decisions
Enable non-invasive treatments
*Avoid biopsy***

Mapping

- Visual / Mohs

**Reduce multiple surgery
Reduce size of scar**

Treatment Monitoring

- Visual / Biopsy

**Validate progress of cure
Allow non-invasive therapy
*Avoid biopsy***

Follow-up surveillance

- Visual

Detect cancer recurrence earlier



Annual procedures

Screening

• Visual



10M



2M

Diagnosis & Staging

• Visual / Biopsy



3.5M



400k

Mapping

• Visual / Mohs



1M



100k

Treatment Monitoring

• Visual / Biopsy



2.5M



300k

Follow-up surveillance

• Visual



3.5M

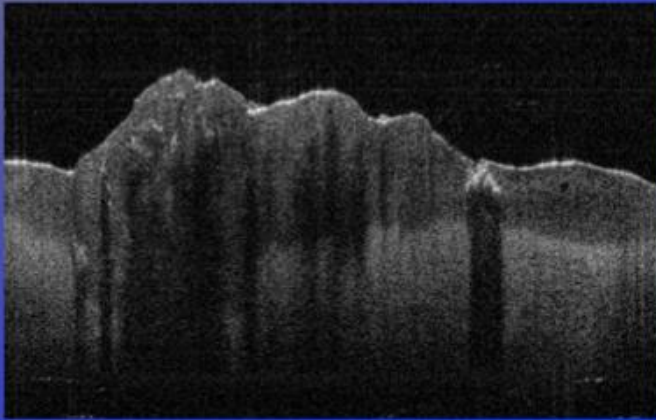


400k

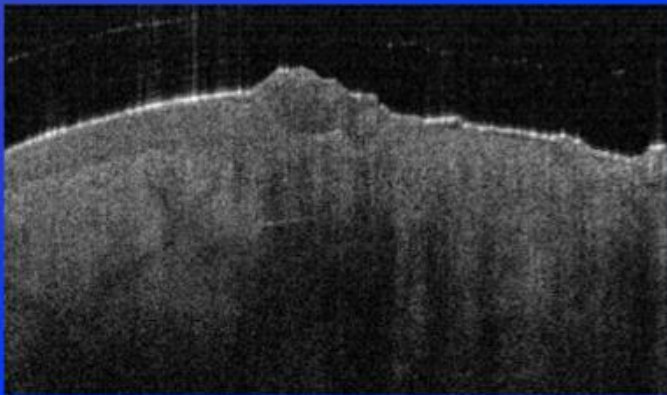
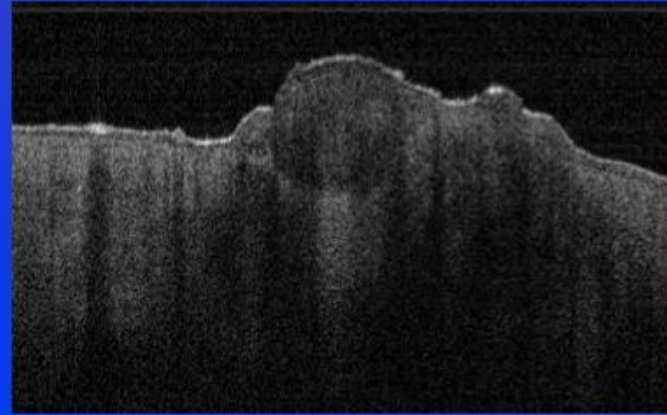


SCC

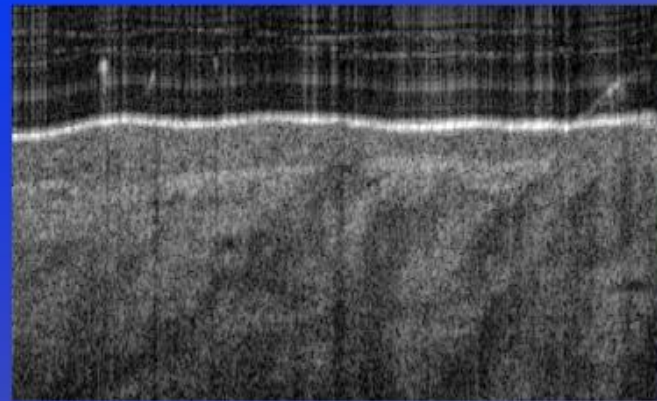
Baseline



1 month



3 months



12 months


Route to Exit

- Potential acquirers are the large medical imaging companies or med tech companies serving dermatology
 - Philips, Siemens, GE, Olympus, Toshiba, Agfa etc.
 - Likely motive will be strategic acquisition of OCT technology & know-how, to build & maintain their leadership in cancer imaging
 - Michelson Diagnostics will be market leading company applying OCT to cancer on commercial basis
 - Our core IP in OCT imaging has broader potential to many other cancers eg. oral, cervical, gastric
 - We will be the ideal acquisition target, when our technology has been validated *commercially* as the best available for cancer applications (2013 onwards)
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- A decorative graphic at the bottom of the slide, consisting of a thick, wavy blue shape that spans the width of the page.

Conclusion

- “Just cut it out!” is not good enough any more.
 - New non-invasive therapies are reaching market
 - Patient focused service and one-stop therapy is more important than ever
 - Costs need to fall as numbers rocket

 - Imaging holds the key to improving things for all parties involved
 - What is the lesion?
 - How deep is it?
 - Where are the edges?
 - What is an appropriate therapy?
 - Has it gone?

 - OCT provides all these answers
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Any questions?