

 #WCD2019

AEDV

HIGHLIGHTS

24th World Congress of Dermatology (WCD)

10-15
JUNIO
2019

Milán



Patrocina:

janssen  Immunology
PHARMACEUTICAL COMPANIES OF 

Organiza:



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Diagnostic imaging in dermatology: OCT, 3D images, dermoscopy and more

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Patrocina:



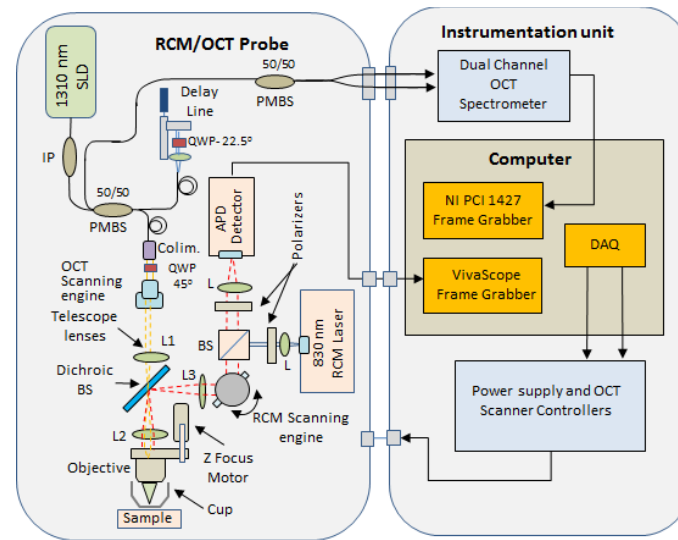
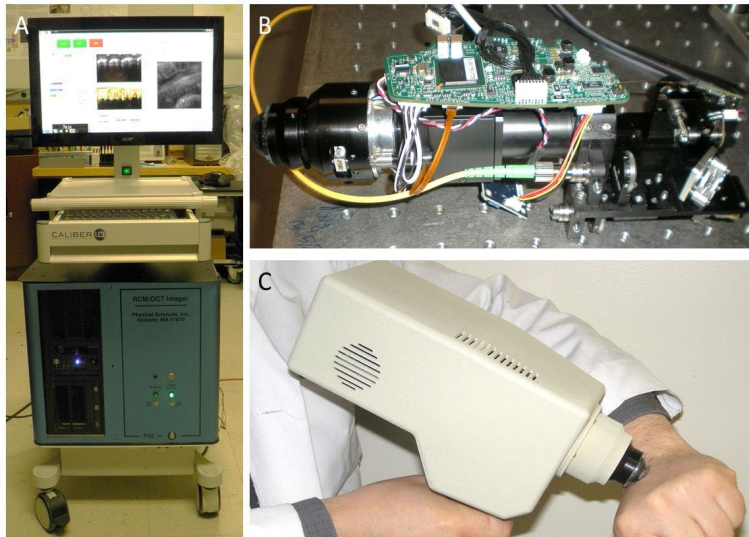
Organiza:



Combined RCM-OCT Device



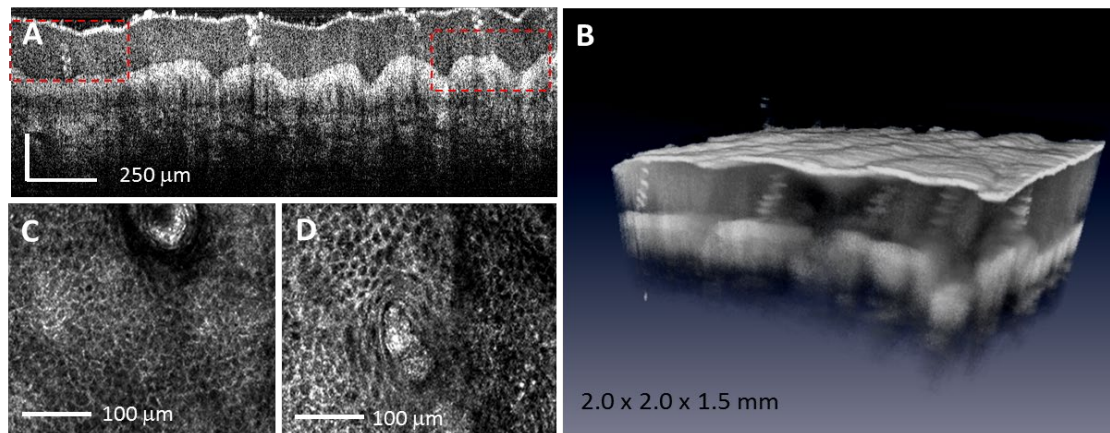
Handheld RCM-OCT Setup/ α Prototype



Imaging Capabilities

RCM: $\sim 800 \mu\text{m}$ FOV
 $\sim 1 \mu\text{m}$ resolution

OCT: $\sim 2 \text{ mm}$ FOV
 $\sim 10 \mu\text{m}$ resolution



Iftimia et al, JBO, 2016; Iftimia et al, JBO, 2017



Handheld optical coherence tomography–reflectance confocal microscopy probe for detection of basal cell carcinoma and delineation of margins

Nicusor Iftimia,^{a,¶} Oriol Yélamos,^{b,c} Chih-Shan J. Chen,^b Gopi Maguluri,^a Miguel A. Cordova,^b Aditi Sahu,^b Jesung Park,^a William Fox,^d Christi Alessi-Fox,^d and Milind Rajadhyaksha^b

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^cUniversitat de Barcelona, Dermatology Department, Hospital Clínic, Barcelona, Spain

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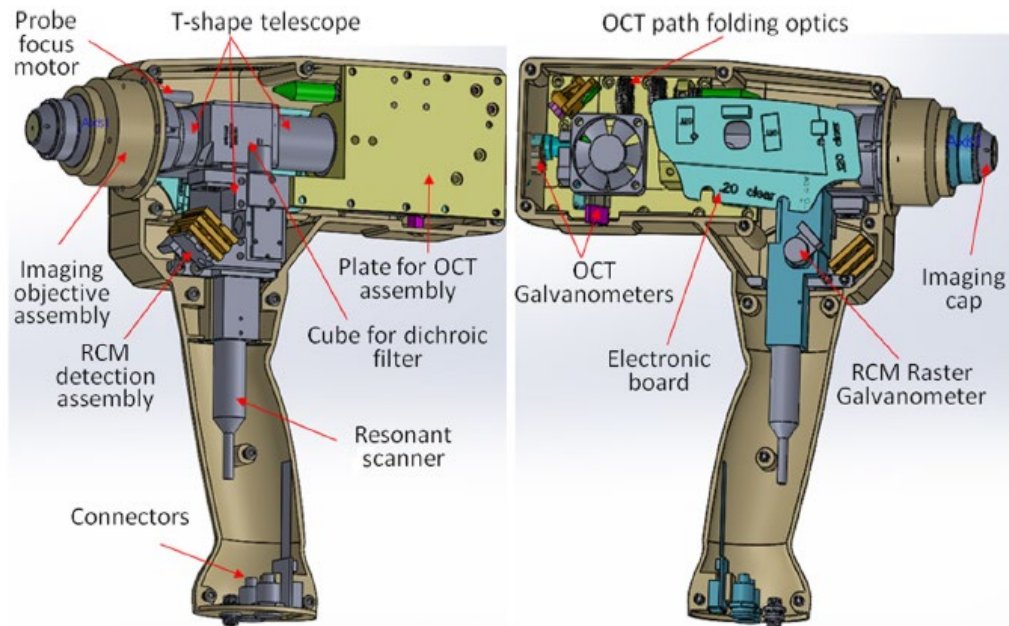
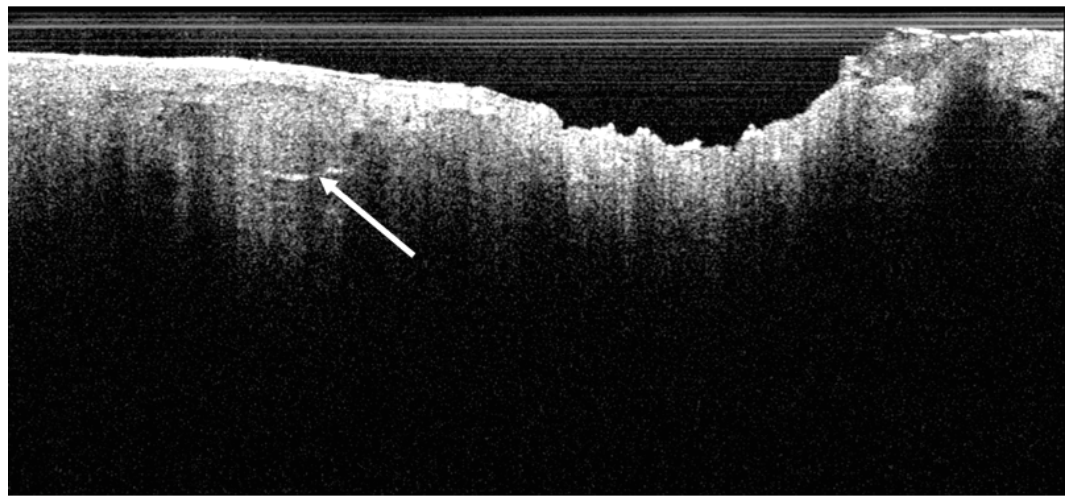
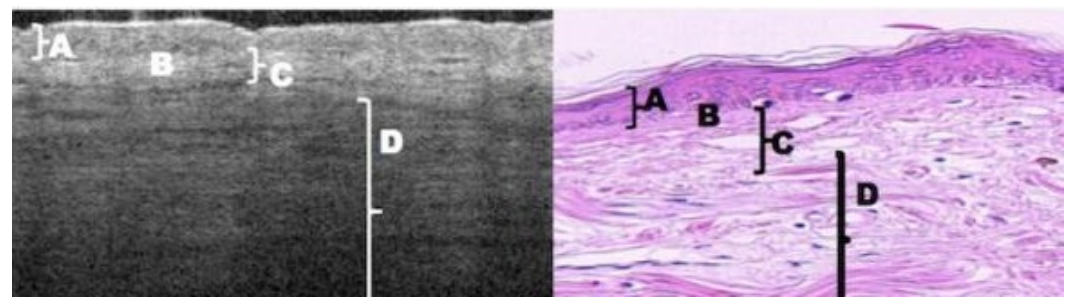
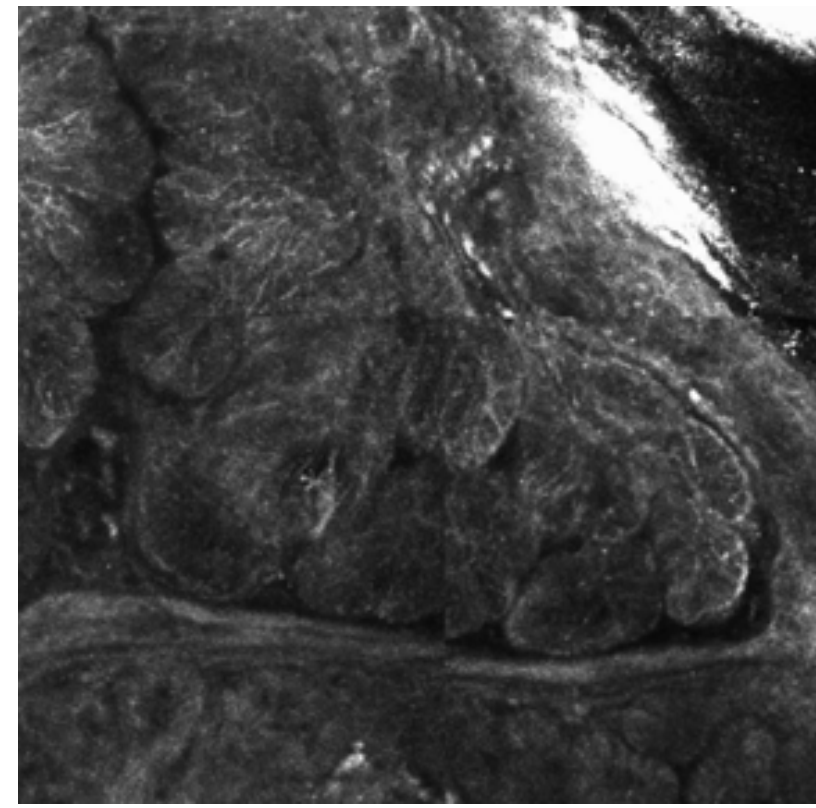
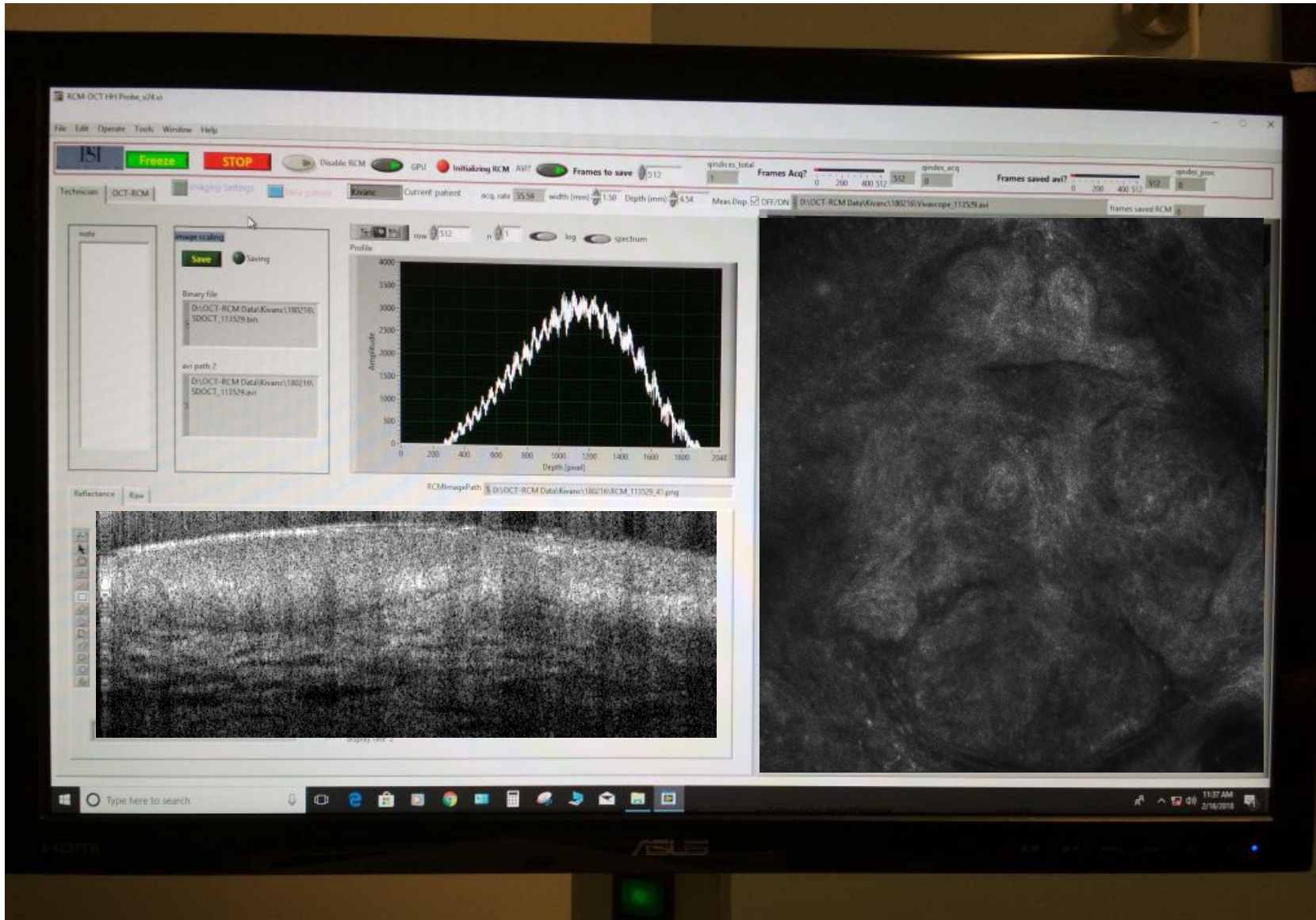


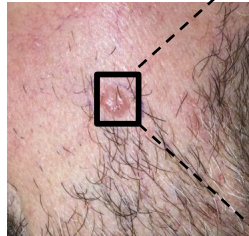
Fig. 2 Solid Work (CAD) design of the handheld OCT/RCM probe.



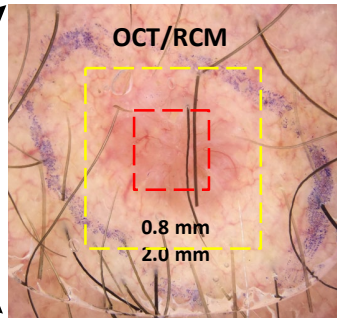
Simultaneous visualization of RCM (right) and OCT (left) features in the interface



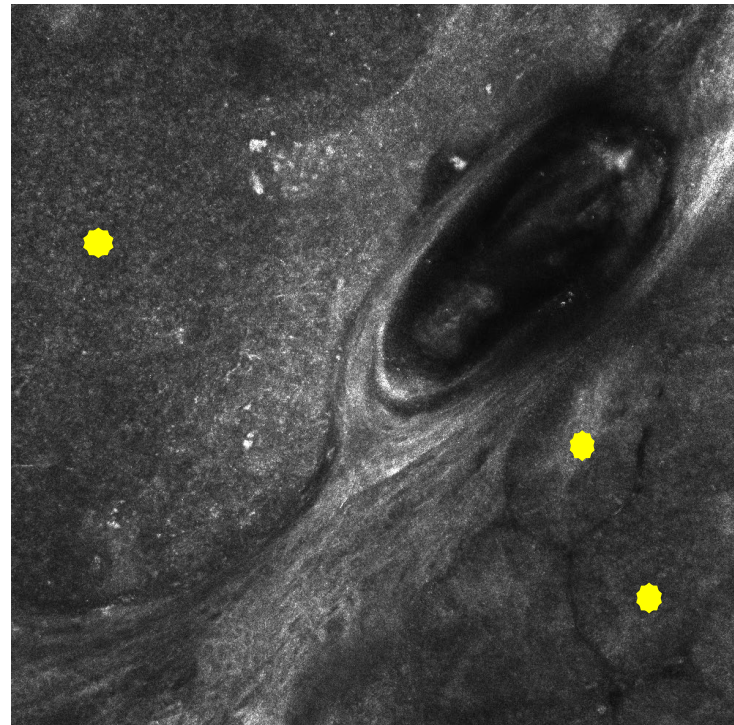
Representative Case



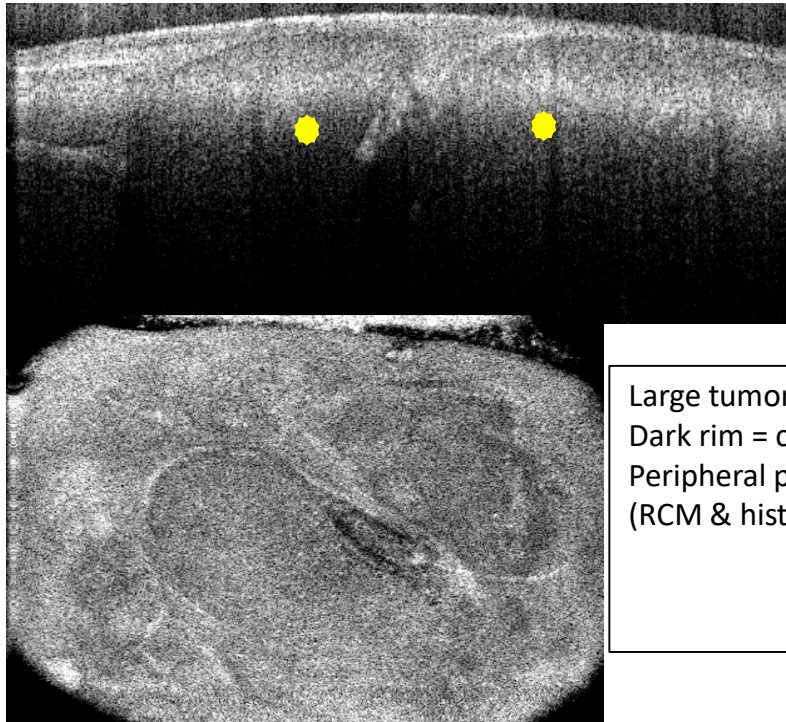
Clinical image



Dermoscopic image

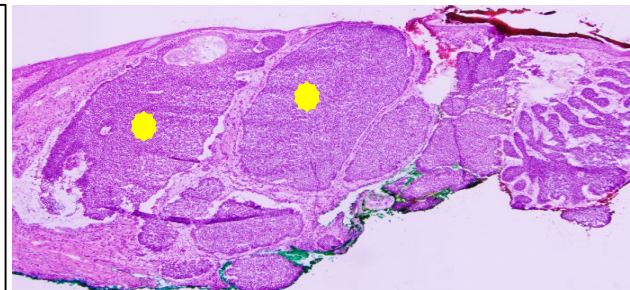


RCM image (en face)



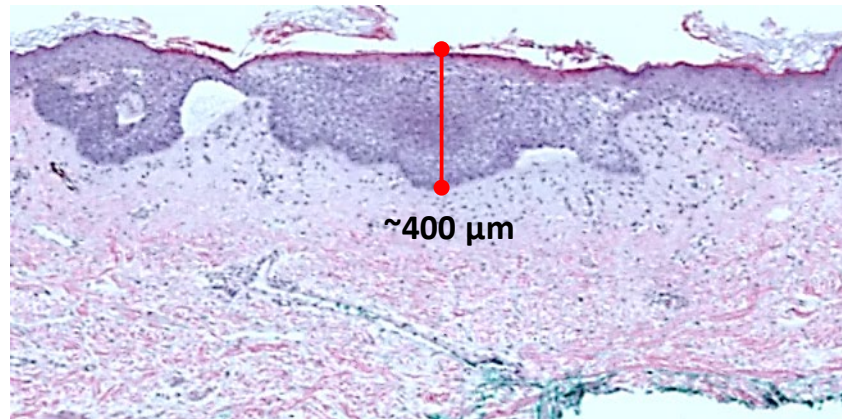
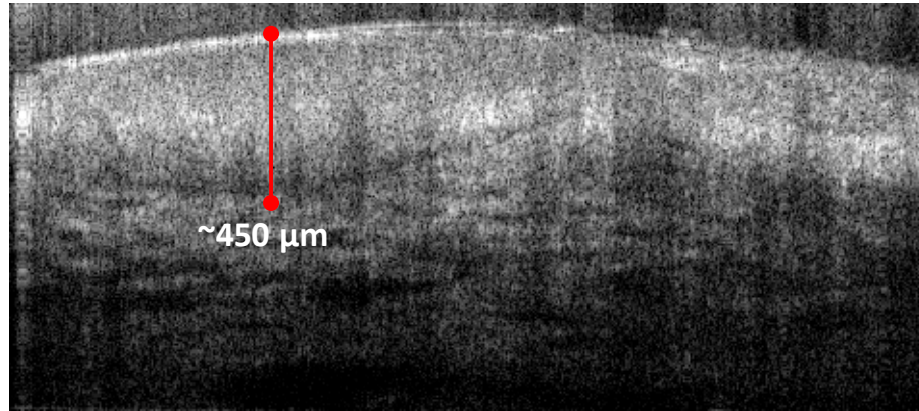
En face OCT

Large tumor nodules
Dark rim = clefting
Peripheral palisading
(RCM & histo only)

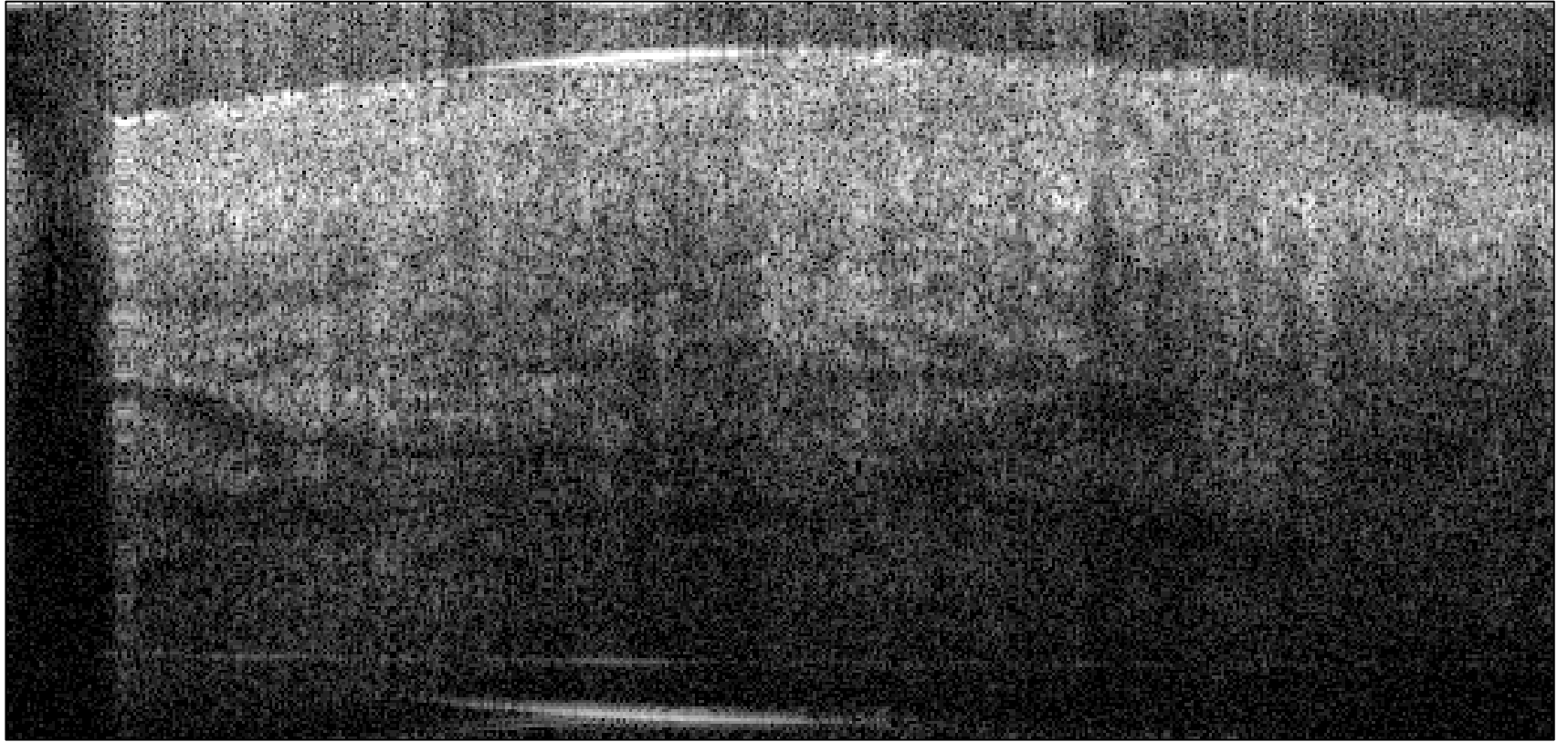


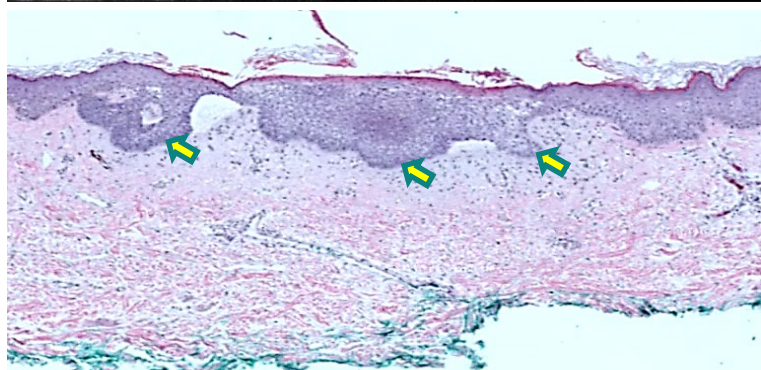
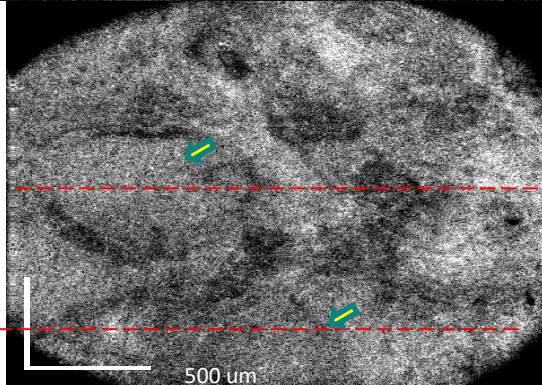
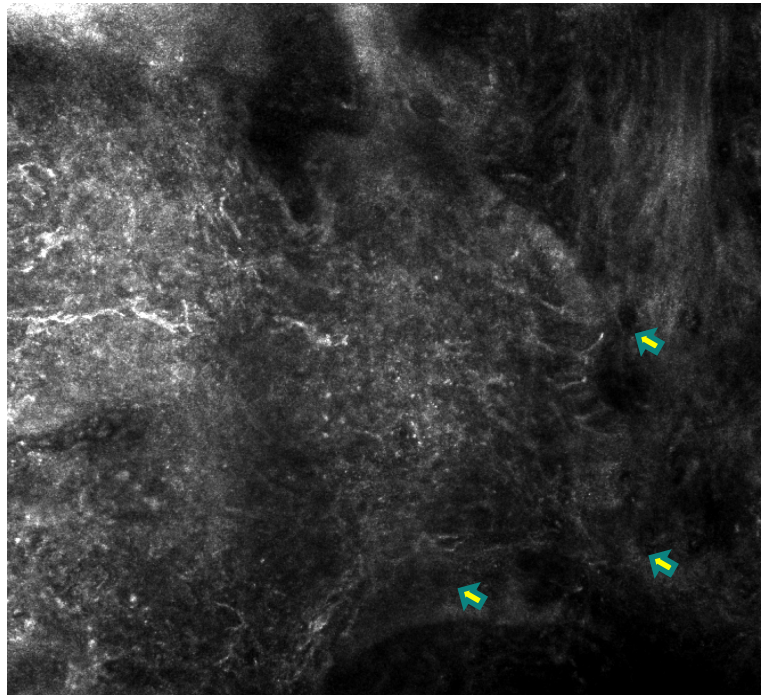
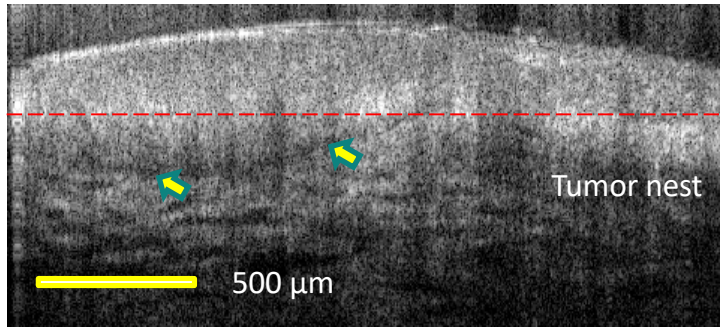
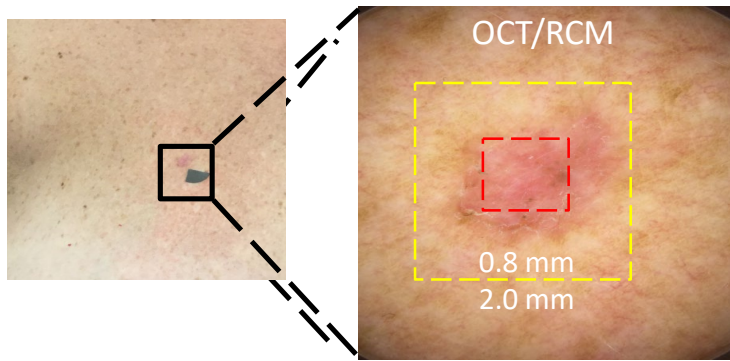
Histology

OCT-Histology Depth correlation



Good correlation between OCT Predicted depth and histology measured depth!





Whole body-3D imaging systems

How to identify the right patient?

[Eur J Cancer Prev. 2014 Sep;23\(5\):458-63. doi: 10.1097/CEJ.0000000000000053.](#)

Twenty nevi on the arms: a simple rule to identify patients younger than 50 years of age at higher risk for melanoma.

[Argenziano G¹](#), [Giacomel J](#), [Zalaudek I](#), [Apalla Z](#), [Blum A](#), [De Simone P](#), [Lallas A](#), [Longo C](#), [Moscarella E](#), [Todorovic-Zivkovic D](#), [Todorovic J](#), [Jovanovic DL](#), [Kittler H](#).

⊕ Author information

- The presence of 20 or more nevi on the arms is an independent predictor of a high total nevus count and risk of melanoma
- A simple and rapid screening tool for either the primary care physician or the dermatologist to help identify high-risk patients



How to identify the right patient?

J Eur Acad Dermatol Venereol. 2015 Jul;29(7):1331-8. doi: 10.1111/jdv.12844. Epub 2014 Nov 14.

Age-related prevalence and morphological appearance of facial skin tumours: a prospective, cross-sectional, observational, multicentre study with special emphasis on melanocytic tumours.

Moscarella E¹, Kyrgidis A¹, Sperduti I², Abramavicus A¹, Argenziano G¹, Cota C³, Eibenschutz L⁴, De Simone P⁴, Longo C¹, Hofmann-Wellenhof R⁵, Zalaudek I⁵.

- A high number of facial naevi could predict a high total naevus count



Total Body Photography

- New lesions
- Enlarging lesions
- Involving lesions
- Significant change of lesions



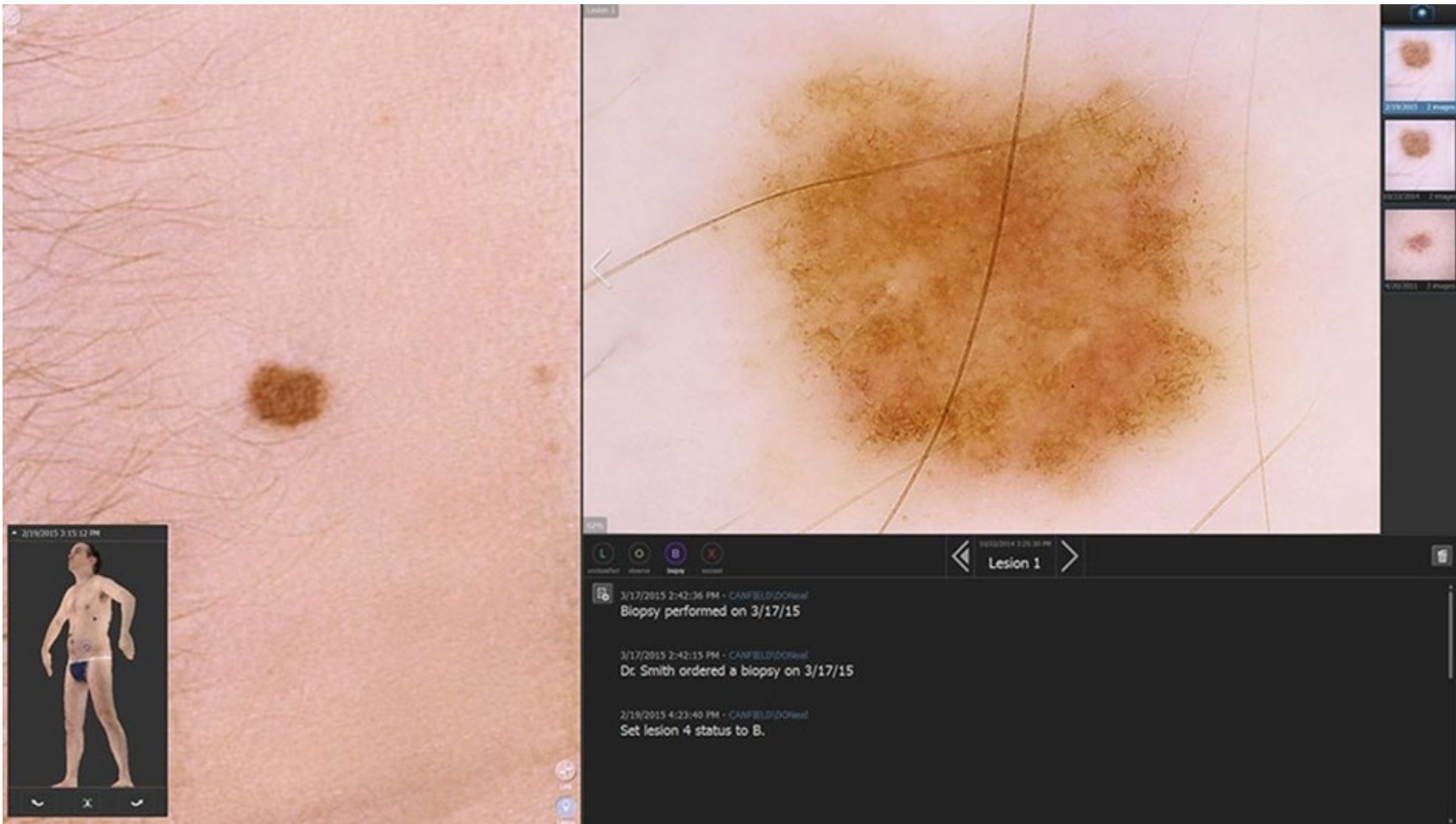
360° whole body imaging system



360° whole body imaging system



360° whole body imaging system



Psoriasis

Vitiligo

**Plastic and
reconstructive
surgery**

Burn management

**Lymphedema
management**

Neurofibromatosis



Milàn



Comparison of the accuracy of human readers versus machine-learning algorithms for pigmented skin lesion classification: an open, web-based, international, diagnostic study



- State-of-the-art machine-learning classifiers outperformed human experts in the diagnosis of pigmented skin lesions and should have a more important role in clinical practice
- However, a possible limitation of these algorithms is their decreased performance for out-of-distribution images, which should be addressed in future research

