

WOCN Annual Conference 2015

**MOBILE STRUCTURE SENSOR FOR REAL-
TIME 3D WOUND ASSESSMENT:**
EX-VIVO VALIDATION USING WOUND PHANTOMS

Wu K, Amling J, Howell A, Kim PCW, Guler O.

Presented by: June Amling, MSN, RN, CNS, CWON, CCRN
Sheikh Zayed Institute for Surgical Innovation
Children's National Health System

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Agenda

- Significance
- Methods
- Results
- Conclusion



Chronic Wound in the US

6.5 Million

Americans Affected ⁽¹⁾

\$25 Billion

Dollars Spent on Treatment ⁽¹⁾

5%

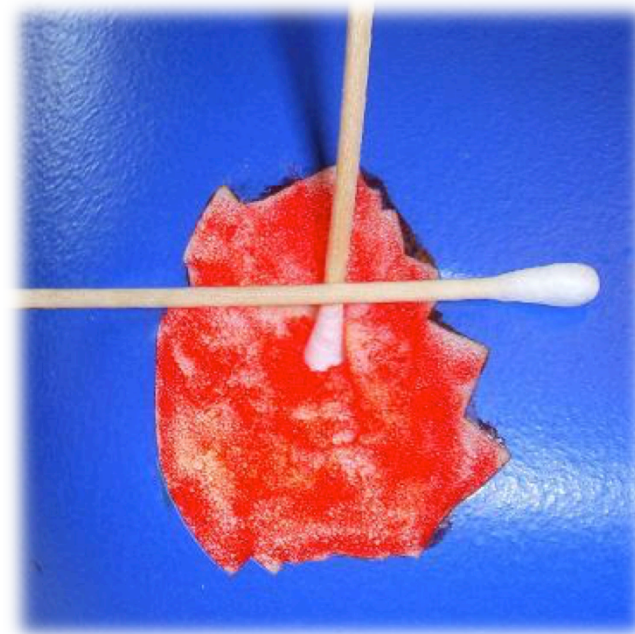
Increase every year on spending ⁽²⁾

0

Gold Standard for Wound Assessment

1. Sen CK1, Gordillo GM, Roy S, Kirsner R, Lambert L, Hunt TK, Gotttrup F, Gurtner GC, Longaker MT. Human skin wounds: a major and snowballing threat to public health and the economy. Wound Repair Regen. 2009 Nov-Dec;17(6):763-71.
2. Global Industry Analysts I. Wound Care Products: A Global Strategic Business Report . Global Industry Analysts; 2008. <http://www.strategyr.com/Wound_Care_Products_Market_Report.asp>

Up to **40%** Measurement Errors ⁽³⁾



3. Langemo D, Anderson J, Hanson D, Hunter S, Thompson P. Measuring wound length, width, and area: which technique? *Advances in Skin & Wound Care*, January 2008, 21(1): 42-45.

20-30%

**Nursing time spent on
documentation**



Practical Alternative?

\$17,000+



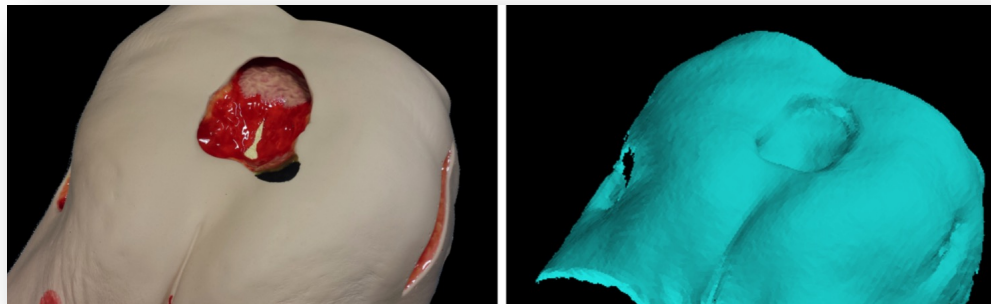
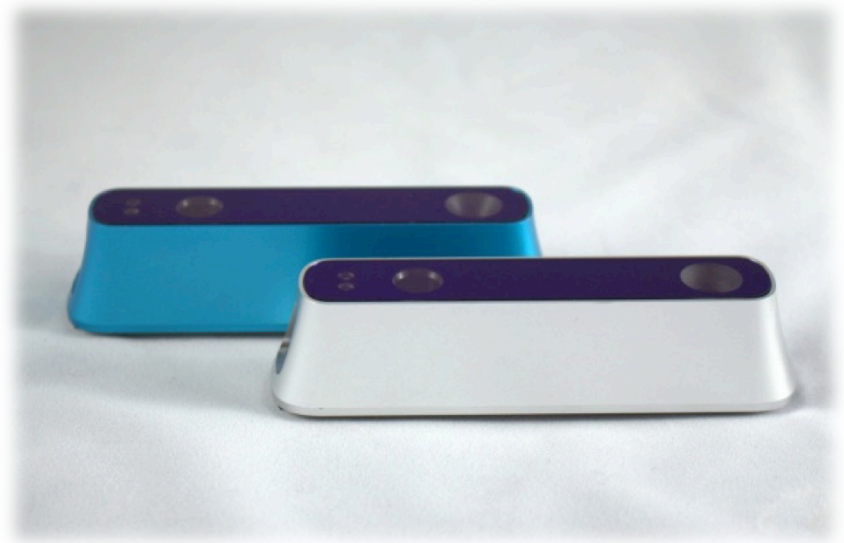
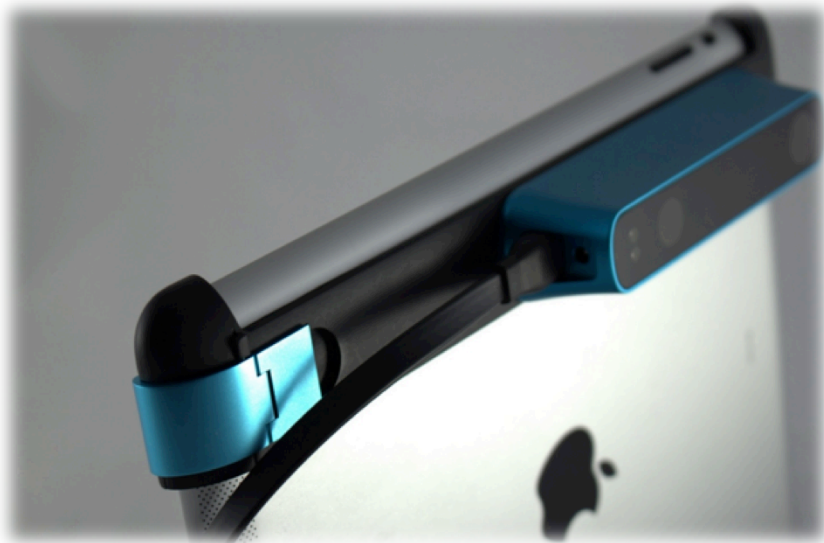
\$8,000+



\$18,000+

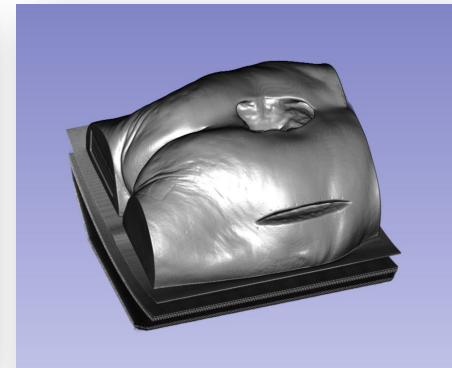
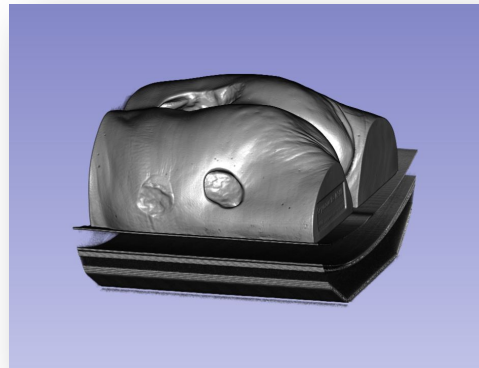


Innovation



Method

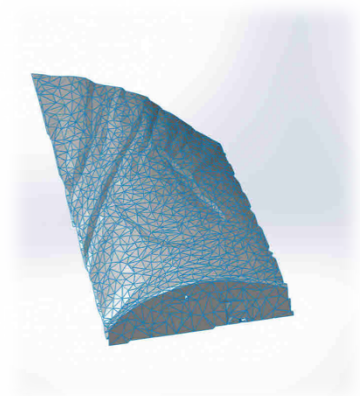
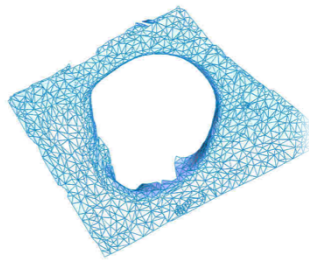
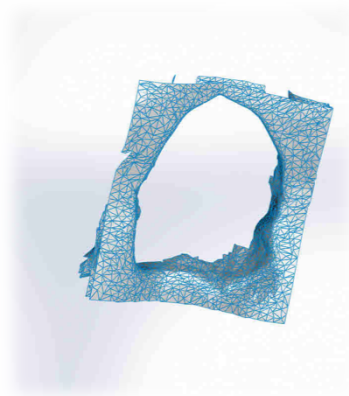
VATA Wound Model



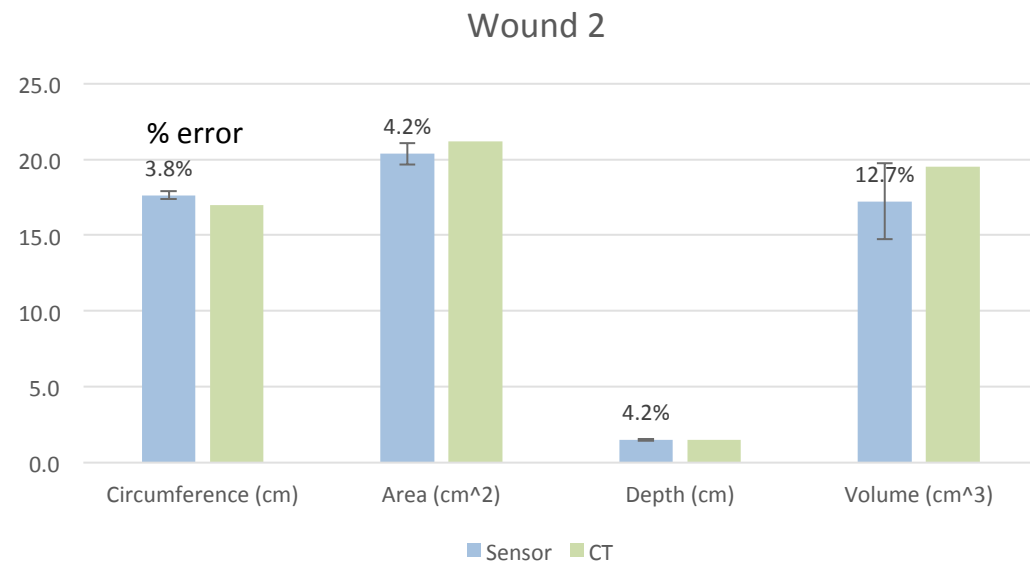
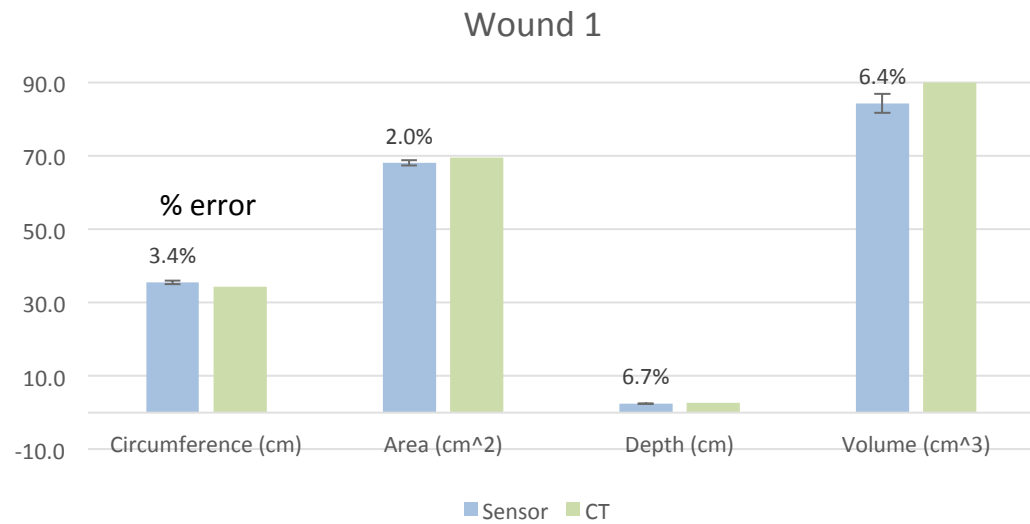
Wound ▾	Circumference (cm) ▾	Area (cm ²) ▾	Depth (cm) ▾	Volume (cm ³) ▾
Wound 1	34.3	69.4	2.6	90.0
Wound 2	17.0	21.2	1.5	19.5
Wound 3	16.6	19.5	0.5	4.7
Wound 4	11.8	8.1	0.1	0.5

Method:

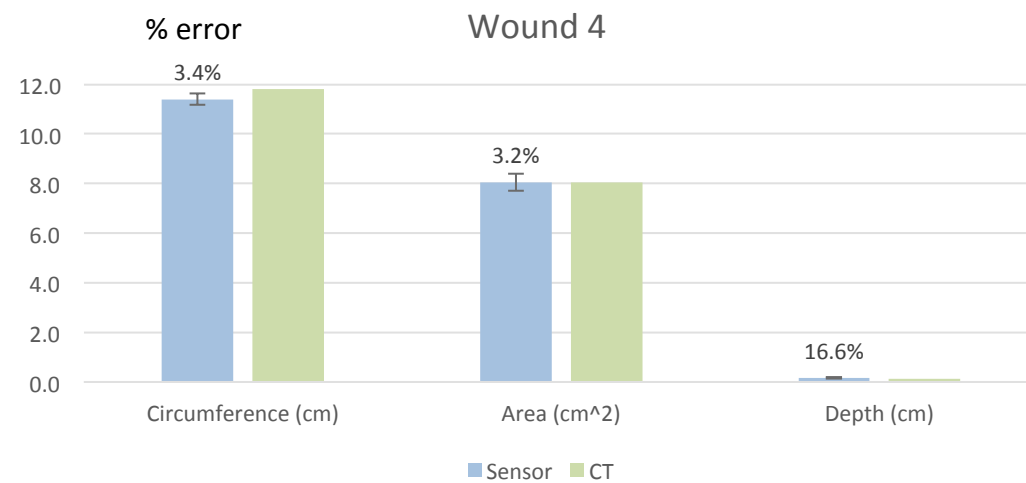
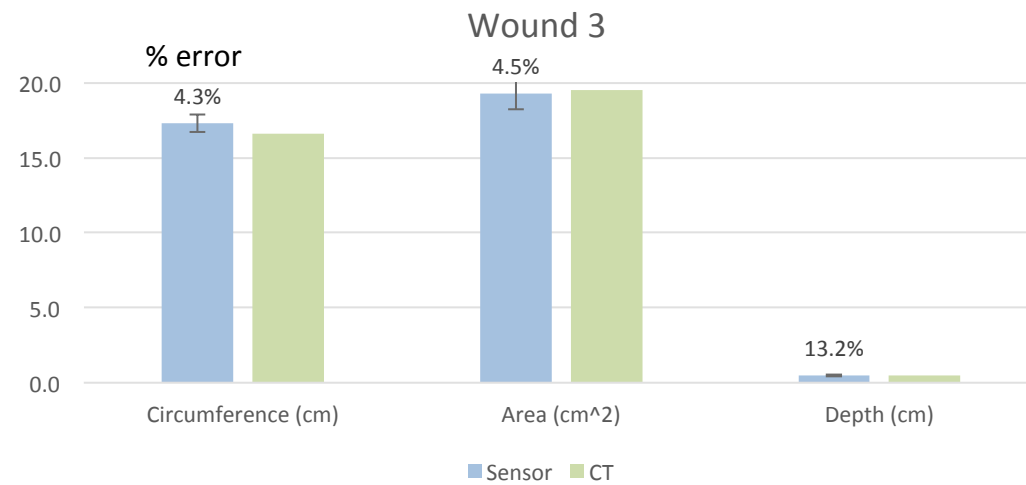
Wound Model and 3D Reconstruction



Result



Result



Future Work



Confidential

Questions?

