

# Skin Scan Training Software Can Help Nurse Practitioners Identify Skin Cancers: S&T, S&A Collaboration

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## Problem

Nurse practitioners (NPs) are a growing presence in Missouri and have become indispensable providers of health care, particularly in rural Missouri, where they are often the patient's first point of contact. The high quality of care that NPs provide has been well-documented, especially in the areas of health promotion and disease prevention. But NP programs provide little formal training in dermatology.

### Our hypotheses:

- NPs can become dermoscopy experts
- Software will help NPs identify critical signs of skin cancer.
- Skin cancer can be identified earlier, when it is easily treatable.

### Our research focus:

Increasing NP skills in identification of skin cancers using new early detection methods.

## Methods

Images a.-d: Signs for distinguishing skin lesions, from S&A's *Melanoma and Mimics*.



a. BCC



b. BCC Post Stretch (whitening)



c. Dermatofibroma



d. Dimple Sign

One NP will be the facilitator to train 10 NPs in the surrounding community.

The NPs will be given five instructional items:

- 15-module clinical diagnosis set, *Melanoma and Mimics*
- Dermoscopy, The Essentials [Johr R, Mosby, St. Louis, 2004]
- The 3-point checklist tutorial on the International Dermoscopy website
- The AAD Dermoscopy Tutorial.
- Skin Scan detection software—scanning for signs of early

skin cancer.

## High Innovation Score

Annual Sales Forecast for USA *				Innovation Status		Idea
Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling	Development Status	Proprietary Protection Status	Concept Score
Ultra Low	\$1	\$88,000	\$340,000	1 of 5 In Development	2 of 5 Patent Pending	60 29 is average
Low Support	\$1.2 M	\$2.0 M	\$3.0 M			
Medium Support	\$9.8 M	\$12.6 M	\$15.7 M			
High Support	\$26.6 M	\$32.8 M	\$40.2 M			
Ultra High	\$48.6 M	\$59.4 M	\$71.8 M			

Inventor Commentary & Alternative Development Scenarios

Inventor(s) Sales Goals			
Minimum Goal	\$0.4 M	Current GOAL	\$0.8 M



This patient was unaware of the growing 5mm near melanoma on the left thigh. We can detect three worrisome features: atypical network, border variation, and gray area.

### Inventor(s) Commentary:

This invention is synergistic with 3Gen, which sells the advanced lighting device, and Melanoscan, which is developing a total immersion skin cancer detection device.

Urgent care centers and Veterans Administration facilities can use skin cancer screening by nurse practitioners as an additional service.

CURRENT SALES FORECAST			
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Ultra Low	\$1	\$88,000	\$340,000
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Ultra High	\$48.6 M	\$59.4 M	\$71.8 M

### If MARKETING CONCEPT Improved

(Increase Concept Score by +20 Points)

Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling
Ultra Low	\$1	\$120,000	\$460,000
Low Support	\$1.6 M	\$2.7 M	\$4.0 M
Medium Support	\$13.3 M	\$16.8 M	\$20.8 M
High Support	\$35.9 M	\$44.0 M	\$52.6 M
Ultra High	\$65.5 M	\$79.5 M	\$95.0 M

### If PRODUCT/SERVICE Improved

(Increase Repeat Rate & Number of Repeats by 30% and Revenue Per Purchase 20%)

Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling
Ultra Low	\$1	\$89,000	\$350,000
Low Support	\$1.2 M	\$2.0 M	\$3.0 M
Medium Support	\$9.9 M	\$12.8 M	\$15.9 M
High Support	\$27.0 M	\$33.2 M	\$40.6 M
Ultra High	\$49.2 M	\$60.1 M	\$72.7 M

### If MARKETING CONCEPT and PRODUCT/SERVICE Improved

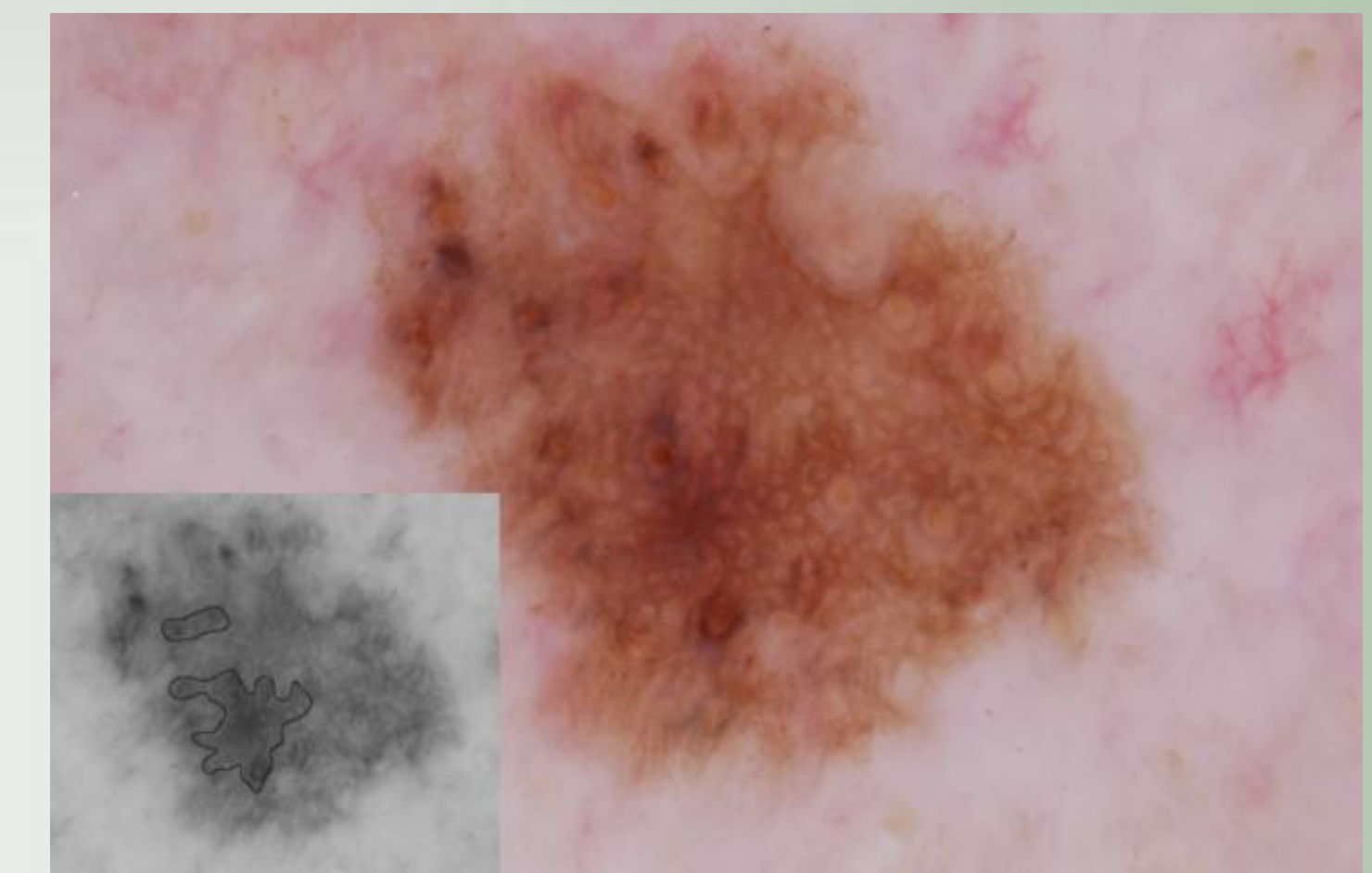
(Increase Concept +20 Points, Repeat Rate & Number of repeats by 30% and Revenue per purchase 20%)

Sales & Marketing Support Level	Conservative 80% odds of selling	Most Likely 50% odds of selling	Aggressive 20% odds of selling
Ultra Low	\$1	\$120,000	\$470,000
Low Support	\$1.6 M	\$2.7 M	\$4.0 M
Medium Support	\$13.4 M	\$17.1 M	\$21.1 M
High Support	\$36.4 M	\$44.4 M	\$53.2 M
Ultra High	\$66.6 M	\$80.7 M	\$95.9 M

**Innovation Evaluation by Planet Eureka's Merwyn Business Simulation** We received an innovation forecast evaluation of 60 on The Planet Eureka website: <http://www.planeteureka.org/marketplace/>. This score was higher than the score of any of the "hot 5" medical innovations on the website, fall 2009. The evaluation is based on forecasting the odds of success for over 15,000 innovations. With at least moderate marketing, Skin Scan is forecast to generate \$15.7M - \$71.8M in sales annually. The Merwyn Business Simulation is endorsed by the US Department of Commerce.

## Skin Scan Advantages

The Skin Scan System uses the 3Gen DL3--a device that uses magnification and cross-polarized light to assess skin lesions. Skin Scan allows identification of early in-vivo microscopic changes that occur before the lesion has any of the typical visible changes.



This lesion appeared as a tan 5mm spot in the clinic inapparent to the patient and originally diagnosed as a benign lentigo. Using a correlation function, it was identified correctly as a melanoma in situ.

## Implications

- Improve nurse practitioners' ability to identify skin cancers
- Improve access to care for patients for skin cancers
- Apply new technology to aid in the recognition of skin cancers
- Identify skin cancers at an early stage
- Improve treatment options for patients with identified skin cancers