# Mobile biosensors

Stolyarov Ivan, MSU

# What will make Sk M.D. possible

#### Sk M.D. have to diagnose:

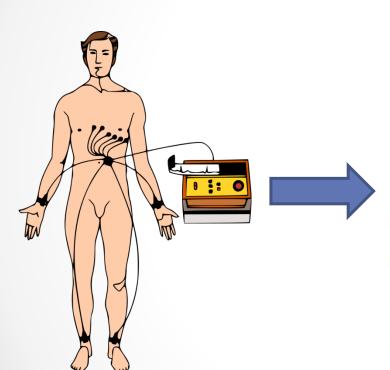
- Anemia
- Diabetes mellitus
- Heart Rhythm Disorders (Abnormal Heart Rhythms)
- Angina pectoris
- Exacerbation of chronic pharyngitis
- Sleep apnea
- Melanoma
- Chronic obstructive pulmonary disease
- Hypothyroidism/ Hyperthyroidism

#### And have to monitor:

- Arterial blood pressure
- Electrocardiography
- Human body temperature
- Respiratory rate
- Pulse oximetry
- Peak expiratory flow

- > Tests of blood
- Analysis of breathing, temperature, pulse
- > ECG

#### ECG sensor



gel-free, non-contact, 2 channel sensors that capacitively couples to the skin (up to 3mm distance from the skin)



### Respiratory rate sensor





Use of Xbox sensors to determine chest moving

Ultra-wide-band scanning chest pulse radar



Acoustic sensor can be placed as a collar in contact to user's skin

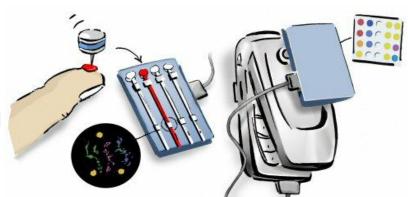


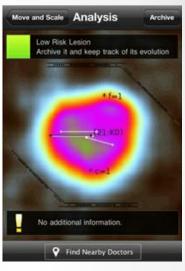
## Blood, skin test and BP monitoring

Melanoma already can be diagnosed by biult-in camera in mobile phone

24-hour blood pressure monitoring







Already existing tools that can take blood convenient, hygienic and safe.

### Thank you