

“My lab has been working to develop and bring these technologies to the surface for 20 years. The Nokia Sensing XCHALLENGE is providing a much-needed vehicle to take these technologies outside the lab and use them in a way that can transform health care.”

- Dr. Anita Goel MD, PhD



TEAM Nanobiosym Health RADAR

Cambridge, Massachusetts, USA

Team Website: www.nanobiosym.com

Team Leader: Dr. Anita Goel, MD, PhD

Team Members: Lisa Goel, Jonathan Sanford, Dan Triggs

TECHNICAL INNOVATION

The Nanobiosym Gene-RADAR® platform represents a breakthrough that has long been a “holy grail” in the field and builds upon Dr. Goel’s pioneering research in nanobiophysics over the past 20 years. Ultimately, the device enables diagnostic testing in the palm of your hand whereas today’s technology requires a full diagnostic laboratory infrastructure. A drop of blood or saliva is placed on a nanochip and inserted into a mobile device. The user selects a particular disease strain from the software interface and pushes the start button to begin the test. The device’s “reader” detects the presence (or absence) of that disease’s pathogen in real-time with gold standard accuracy, which is currently only available in a diagnostic lab.

Additionally, Gene-RADAR does not require any overhead infrastructure, such as constant electricity or running water. The results are then delivered to the user within an hour.

Gene-RADAR was developed specifically to be user friendly and require minimal training. Its user-interface and experience are simple to use by the end user, which may be a consumer or healthcare provider. The device is also designed to interface with and integrate into other devices (iPad, iPhone, Android), as well as the cloud, which enables convenient, real-time sensing in any location.

Gene-RADAR[®] can be applied across the entire spectrum of healthcare including diagnosis, monitoring, drug development, companion diagnostics and personalized nanomedicine. The company has already demonstrated custom apps for E. coli and HIV/AIDS viral load detection, which surpasses current commercial technologies in the global marketplace.

POTENTIAL IMPACT

Gene-RADAR is the next generation of technology that will transform the way healthcare is delivered across the globe. Today, nanotechnology exists mostly in R&D labs around the world and is inaccessible to consumers and health care providers. Gene-RADAR is poised to help launch the era of personalized nanomedicine and mobilized healthcare. By nanoscale monitoring of DNA/RNA biomarkers in real time, health diagnosis, monitoring and treatment of individuals can be truly personalized.

TEAM STORY

Dr. Anita Goel started Nanobiosym (NBS) more than nine years ago as a research incubator institute to: create new science and disruptive technologies that emerge at the convergence of physics, biomedicine, and nanotechnology; spin off new companies and joint ventures that capture the commercial impact of the promise of nanotechnology; and transition these technologies to solve some of the planet's most pressing challenges in health care, energy and the environment.