

## Applications:

This sensor platform will be used for a variety of medical diagnostic issues. These include

- early diagnosis of infection;
- early diagnosis of breast and other cancers;
- monitoring of signature antigens to track treatment;
- development of broad spectrum protein arrays to screen for disease (e.g., antibody arrays); and
- sensitive detection of signature antigens to track disease progression.

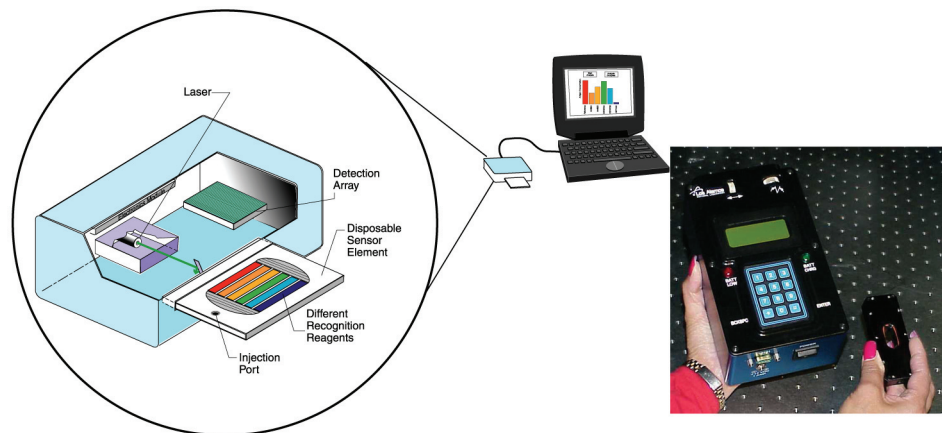
Other potential applications include environmental monitoring, bio-threat detection, food inspection and industrial uses.

## Benefits:

- Ultra-high sensitivity and specificity
- Simple use—one step with no reagents required
- Fast detection times
- Adapted to planar optical waveguides to facilitate miniaturization
- Low power consumption and light weight
- Inexpensive, replaceable sensor elements
- Suitable for use in a point-of-care facility

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*Prototype sensor system concept and protein toxin optical sensor (handheld prototype).*

## Summary:

An optical biosensor has been developed for the rapid detection of protein toxins and other biological pathogens. The sensor platform is extremely flexible and has been adapted for use with virtually any recognition molecule. Accordingly, this sensor can be used to detect any signature biomolecule. Although originally developed to address needs in environmental detection of bio threat agents, this sensor system can and is being adapted for use in medical diagnostics. In particular, current efforts include the development of this sensor system for the detection of viruses (including influenza and hantavirus), bacterial infections (e.g., tuberculosis), protein toxins (e.g., staph enterotoxin B), and tumor specific antigens for the early diagnosis of cancer (CEA, her-2-neu etc.).

## Development Stage:

The optical biosensor has been prototyped and the prototype has been demonstrated.

## Patent Status:

These represent a small subset of the biosensor portfolio:

US Patent 5,601,654	Flow Through Ion Beam Gun
US Patent 6,297,059	Triggered Optical Biosensor
US Patent 6,627,396	Influenza Biosensor
Nonprovisional, pending	Integrated Optical Biosensor

## Licensing Status:

UC/LANL is seeking development and licensing partners to commercialize this technology portfolio.