CLAIMS

1. A system for detecting a form of cancer in a plurality of patients, the system comprising:

a database of patient records including at least one cancer risk factor derived from genetic data for each patient;

a plurality of patient biometric sensors, wherein the each patient biometric sensor is configured to sense biomarkers related to a cancer state, wherein the biomarkers emanate from each patient;

a network of distributed environmental sensors, wherein the distributed environmental sensors are mounted at a plurality of stationary locations and within a plurality of transportation devices, wherein each distributed environmental sensor is configured to sense a local environment for one or more of particulate matter and chemical pollutants;

a geolocation tracking device for tracking a current location of each patient;

a processing system in communication with the database of patient records, each patient biometric sensor, and the network of distributed environmental sensors, wherein the current location of each patient is cross-referenced to at least one distributed environmental sensor in proximity to the current location of each patient to monitor a first environmental status surrounding each patient; and

a feedback device configured to communicate a signal to each patient based on the results of processing by the processing system.

2. The system of claim 1 wherein at least one distributed environmental sensor is a non-specific chemical sensor.

3. The system of claim 1 wherein at least one distributed environmental sensor is a non-specific chemical sensor.

4. The system of claim 3 wherein a plurality of elements in the non-specific chemical sensor respond to an exposure to a chemical in the local environment surrounding the non-specific chemical sensor in a pattern of responses which are correlated to a first chemical suspected of being related to an increased risk for developing lung cancer.

5. The system of claim 4 wherein the first chemical is radon.

6. The system of claim 4 wherein the first chemical is bis(chloromethyl) ether.

7. The system of claim 4 wherein the first chemical is of a family of polycyclic aromatic hydrocarbons.

8. The system of claim 3 wherein the non-specific chemical sensor comprises a polymer film doped with chemical species that modulate the absorbent properties of a surface of the polymer film.

9. The system of claim 3 wherein the non-specific chemical sensor comprises crystals whose natural oscillation frequency is modulated by absorbance of materials onto surfaces or onto films applied to surfaces of the crystal.

10. The system of claim 1 wherein the patient biometric sensor detects biomarkers of lung cancer in the breath of each patient.

11. The system of claim 1 wherein at least one distributed environmental sensor is a particulate sensing device.

12. The system of claim 1 wherein at least one distributed environmental sensor senses at least a first biological agent.

13. The system of claim 12 wherein the first biological agent is *Mycobacterium tuberculosis.*

14. The system of claim 1 wherein at least one local environment is a work environment including at least one distributed environmental sensor.

15. The system of claim 14 wherein the at least one distributed environmental sensor senses radioactivity.

16. The system of claim 14 wherein the at least one distributed environmental sensor includes chemical exposure sensing.

17. The system of claim 14 wherein the at least one distributed environmental sensor includes particulate exposure sensing.

18. The system of claim 1 wherein at least one patient biometric sensor includes blood sensing.

19. The system of claim 1 wherein at least one patient biometric sensor includes sensing of a biometric.

20. The system of claim 19 wherein the biometric is an inhalation rate.

21. The system of claim 19 wherein the biometric is a pulse.

22. The system of claim 1 wherein at least one patient biometric sensor is located within a lung.

23. The system of claim 22 wherein the at least one patient biometric sensor senses chemical markers.

24. The system of claim 22 wherein the at least one patient biometric sensor senses exposure to environmental chemicals.

25. The system of claim 1 wherein at least two of the distributed environmental sensors comprise a mesh network topology.

26. A method of reducing a risk of acquiring lung cancer of a plurality of patients predisposed to acquiring lung cancer, the method comprising:

populating a database of patient records with at least one cancer risk factor derived from genetic data for each patient;

activating a patient biometric sensor and a geolocation tracking device for tracking a current location of each patient, wherein the patient biometric sensor is configured to sense biomarkers related to a cancer state, and wherein the biomarkers emanate from each patent;

activating a network of distributed environmental sensors, wherein:

the distributed environmental sensors are mounted at a plurality of stationary locations and within a plurality of transportation devices;

each distributed environmental sensor is configured to sense a local environment for one or more of particulate matter and chemical pollutants;

activating a processing system in communication with the database of patient records, each patient biometric sensor, and the network of distributed environmental sensors, wherein the current location of each patient is cross-referenced to at least one distributed environmental sensor in proximity to the current location of each patient to monitor a first environmental status surrounding each patient; and

activating a feedback device, wherein the feedback device communicates a signal to each patient based on the results of processing by the processing system.

27. The method according to claim 26 wherein at least one distributed environmental sensor is a non-specific chemical sensor.

28. The method according to claim 27 wherein a plurality of elements in the non-specific chemical sensor respond to an exposure to a chemical in an environment surrounding the non-specific chemical sensor in a pattern of responses which are correlated to a first chemical suspected of being related to an increased risk for developing lung cancer.

29. The method according to claim 28 wherein the first chemical is asbestos.

30. The method according to claim 28 wherein the first chemical is bis(chloromethyl) ether.

31. The method according to claim 28 wherein the first chemical is of a family of polycyclic aromatic hydrocarbons.

32. The method according to claim 27 wherein the non-specific chemical sensor comprises a polymer film doped with chemical species that modulates the absorbent properties of a surface of the polymer film.

33. The method according to claim 27 wherein the non-specific chemical sensor comprises crystals whose natural oscillation frequency is modulated by absorbance of materials onto surfaces or onto films applied to surfaces of the crystal.

34. The method according to claim 26 wherein the second sensor system comprises a particulate sensing device.

35. The method according to claim 26 wherein the second sensor system senses at least a first biological agent.

36. The method according to claim 35 wherein the first biological agent is *Mycobacterium tuberculosis.*

37. The method according to claim 26 wherein at least one local environment is a work environment including at least one distributed environmental sensor.

38. The method according to claim 37 wherein the at least one distributed environmental sensor senses radioactivity.

39. The method according to claim 37 wherein the at least one distributed environmental sensor includes chemical exposure sensing.

40. The method according to claim 37 wherein the at least one distributed environmental sensor includes particulate exposure sensing.

41. The method according to claim 26 wherein at least one biometric sensor includes blood sensing.

42. The method according to claim 26 wherein at least one biometric sensor includes sensing of a biometric.

43. The method according to claim 42 wherein the biometric is an inhalation rate.

44. The method according to claim 42 wherein the biometric is a pulse.