CLAIMS

What is Claimed:

1. A fluid sample handling system, comprising:

a sample container holder configured to receive a sample container,

the sample container holder being moveable between at least (1) a first sample holder position and (2) a second sample holder position;

a sample probe,

the sample probe defining a proximal end configured for fluid communication with the sample container,

the sample probe configured to communicate therethrough, in a first direction, fluid aspirated from the sample container,

the sample probe defining a sample probe axis along which the sample probe is optionally moveable between at least (1) a first sample probe position for aspirating fluid from the sample container when the sample holder is located at the first sample holder position and (2) a second sample probe position for washing;

a wash manifold,

the wash manifold being moveable along a wash manifold path between at least a first wash manifold position and a second wash manifold position,

the second wash manifold position being such that when the wash manifold is located at the second position, the wash manifold receives fluid communicated from the proximal end of the sample probe when the sample probe is located at the second probe position and the wash manifold interrupts fluid communication between the proximal end of the sample probe and a sample container received by the sample holder, and

the wash manifold path optionally being perpendicular to the sample probe axis.

2. The fluid sample handling system of claim 1, further comprising a source of rinse fluid, the source of rinse fluid configured for communication of rinse fluid through the sample probe.

3. The fluid sample handling system of any one of claims 1-2, further comprising a vacuum source configured to effect motion of fluid received by the wash manifold.

4. The fluid sample handling system of any one of claims 1-3, further comprising a linear motion stage configured to effect motion of the sample probe between the first sample holder position and the second sample holder position.

5. The fluid sample handling system of any one of claims 1-4, further comprising a motion stage configured to effect motion of the wash manifold between the first wash manifold position and the second wash manifold position.

6. The fluid sample handling system of any one of claims 1-5, wherein the sample container holder is manually moveable between the first sample holder position and the second sample holder position.

7. The fluid sample handling system of any one of claims 1-6, further comprising a housing, the housing being configured such that the sample container holder is visible to a user and the wash manifold is separated from the user.

8. The fluid sample handling system of claim 7, wherein the housing is configured so as to separate the probe from the user when the probe is in the second sample probe position.

9. The fluid sample handling system of any one of claims 1-8, further comprising a restorative spring, the restorative spring being configured to oppose the motion of the sample probe toward an obstacle.

10. The fluid sample handling system of claim 9, wherein the restorative spring comprises a metal spring, a magnet, or any combination thereof.

11. The fluid sample handling system of claim 10, wherein the restorative spring comprises a metal spring.

12. The fluid sample handling system of any one of claims 1-11, further comprising a sensor configured to detect a location of the sample probe.

13. The fluid sample handling system of any one of claims 9-12, wherein the fluid sample handling system is configured to stop a motion of the probe in response to a signal associated with a location of the probe.

14. A method, comprising operating a fluid sample system of any one of claims 1-13 so as to aspirate a fluid from a sample container into the sample probe.

15. The method of claim 14, further comprising operating the fluid sample system so as to effect communication of rinse fluid through the sample probe following aspiration of fluid from the sample container into the sample probe.

16. A fluid sample handling system, comprising:

a sample container region;

a probe configured for aspiration of a fluid sample from a sample container located at the sample container region; and

a wash manifold,

the fluid sample handling system being convertible between:

(a) a sampling state in which the probe is in a sampling position and the sample container region is in a sampling position such that the probe is in fluid communication with a container located at the sample container region,

(b) a washing state in which the probe is in a washing position and the wash manifold is in a washing position such that the probe is in fluid communication with the wash manifold and the probe is free of fluid communication with a container located at the sample container region, and

(c) a loading state in which the sample container region is in a loading position such that a user can locate a container at the sample container region without placing the container into fluid communication with the probe.

17. The fluid sample handling system of claim 16, wherein in the loading state, the probe is in a loading position such that the probe is free of fluid communication with a container located at the sample container region when the sample container region is in its loading position.

18. The fluid sample handling system of any one of claims 16-17, further comprising a housing, the housing being configured such that the sample container holder is visible to a user and the wash manifold is separated from the user.

19. A method, comprising:

with a probe in a sampling position, collecting a sample from a sample container in a sampling position;

translating the probe in a direction of probe translation to a washing position;

washing the probe with a rinse fluid while the probe is in the washing position; and

collecting the rinse fluid from the probe.

20. The method of claim 19, wherein the probe is visible to a user when the probe is in the sampling position and wherein the probe is separated from the user when the probe is in the washing position.

21. The method of any one of claims 19-20, further comprising translating the sampling container from a sampling position to a loading position.

22. The method of claim 19, wherein the sample container is engaged with a sample container holder moveable so as to place the sample container in the sampling position and in the loading position.

23. The method of any one of claims 19-22, wherein the rinse fluid is collected by a wash manifold located at a collection position.

24. The method of claim 23, further comprising translating the wash manifold in a direction of wash manifold translation from the collection position to a standby position.

25. The method of claim 24, wherein the translating the wash manifold is in a direction essentially perpendicular to the direction of probe translation.