CLAIMS

1. A device for separating a liquid sample within a collection container, comprising:

a separator having an open through-hole defined therethrough, the through-hole defining a first open face at a first end of the separator and a second open face at a second end of the separator, the first end of the separator substantially opposite the second end of the separator, wherein the through-hole is adapted for liquid to pass therethrough, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast,

wherein at least a portion of the separator is adapted to deform upon application of rotational force.

2. The device of claim 1, wherein the first open face and the second open face are defined within the float.

3. The device of claim 1, wherein at least a portion of the device has a spheroid shape.

4. The device of claim 3, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast taken together form the spheroid shape.

5. The device of claim 1, wherein the through-hole is defined in part by the float and in part by the ballast and is adapted for liquid to pass therethrough.

6. The device of claim 1, wherein the through-hole has a circular cross-section.

7. The device of claim 1, wherein the through-hole has an elliptical cross-section.

8. The device of claim 1, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to the separator.

9. The device of claim 1, further comprising an initial engagement band circumferentially disposed about at least a portion of the separator.

10. The device of claim 9, wherein the initial engagement band is at least one of continuous and at least partially segmented.

11. The device of claim 9, wherein the initial engagement band and the float are formed of the same material.

12. The device of claim 9, wherein the initial engagement band bisects at least a portion of the ballast.

13. The device of claim 1, wherein the ballast comprises a base portion and a joining structure for engaging a portion of the float.

14. The device of claim 13, wherein the joining structure provides flexure between the float and the ballast.

15. The device of claim 1, wherein the float comprises a joining structure for engaging a portion of the ballast.

16. The device of claim 15, wherein the joining structure provides flexure between the float and the ballast.

17. A separation assembly for enabling separation of a liquid sample into first and second phases, comprising:

a collection container having a first end, a second end, and a sidewall extending therebetween, the collection container defining a longitudinal axis between the first end and the second end; and

a device comprising a separator having an open through-hole defined therethrough, the through-hole defining a first open face at a first end of the separator and a second open face at a second end of the separator, the first end of the separator substantially opposite the second end of the separator, wherein the through-hole is adapted for liquid to pass therethrough, the separator having a float, having a first density, and a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast,

wherein at least a portion of the separator is adapted to deform upon application of rotational force.

18. The separation assembly of claim 17, wherein, upon applied force, the separator is adapted to transition from a first position in which the through-hole is in an open position that is not transverse to the longitudinal axis of the collection container for liquid to pass therethrough and into the collection container, to a second position in which the through-hole is in a closed position that is not parallel with the longitudinal axis of the collection container for preventing liquid from being received therethrough.

19. The separation assembly of claim 18, wherein at least a portion of the through-hole is oriented substantially along the longitudinal axis of the collection container in the first position, and wherein at least a portion of the through-hole is oriented transverse to the longitudinal axis of the collection container in the second position.

20. The separation assembly of claim 19, wherein transition of the through-hole from the open position to the closed position coincides with rotation of the separator from the first position to the second position.

21. The separation assembly of claim 19, wherein the device sealingly engages a portion of the sidewall of the collection container in the second position to prevent flow of liquid therethrough or therearound.

22. The separation assembly of claim 18, wherein the ballast comprises a joining structure for engaging a portion of the float, and at least a portion of the float comprises a circular outer perimeter having a curved cross-section perpendicular to the through-hole, wherein the outer perimeter of the float forms a continuous seal with the sidewall of the collection container in the second position.

23. The separation assembly of claim 18, wherein the float comprises a joining structure for engaging a portion of the ballast, and at least a portion of the float comprises a circular outer perimeter having a curved cross-section perpendicular to the through-hole, wherein the outer perimeter of the float forms a continuous seal with the sidewall of the collection container in the second position.

24. An assembly for enabling separation of a fluid sample into first and second phases, comprising:

a collection container having an open end, a closed end, and a sidewall extending therebetween defining an interior, the collection container further defining a longitudinal axis between the open end and the closed end;

a closure adapted for sealing engagement with the open end of the collection container; and

a separator disposed within the collection container and engaged with a portion of the sidewall adjacent the open end in an initial position during introduction of the fluid sample into the collection container, the separator having a through-hole defined therethrough for allowing fluid to pass therethrough, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast,

wherein the closure is pierceable by a cannula for introducing the fluid sample into the collection container and wherein the cannula is spaced apart from the separator during introduction of the specimen into the collection container.

25. The assembly of claim 24, wherein the cannula does not contact the separator during introduction of the specimen into the collection container.

26. The assembly of claim 24, wherein at least a portion of the separator has a spheroid shape.

27. The assembly of claim 26, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast together form the spheroid shape.

28. The assembly of claim 24, wherein the through-hole is defined in part by the float and in part by the ballast and is adapted for fluid to pass therethrough.

29. The assembly of claim 24, wherein the through-hole has a circular cross-section.

30. The assembly of claim 24, wherein the through-hole has an elliptical cross-section.

31. The assembly of claim 24, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to any of the assembly, collection container, and separator.

32. The assembly of claim 24, further comprising an initial engagement band circumferentially disposed about at least a portion of the separator.

33. The assembly of claim 32, wherein the initial engagement band is at least one of continuous and at least partially segmented.

34. The assembly of claim 32, wherein the initial engagement band and the float are formed of the same material.

35. The assembly of claim 32, wherein the initial engagement band bisects at least a portion of the ballast.

36. The assembly of claim 24, wherein the ballast comprises a base portion and a joining structure for engaging a portion of the float.

37. The assembly or of claim 24, wherein the float comprises a joining structure for engaging a portion of the ballast.

38. The assembly of claim 37, wherein the joining structure provides flexure between the float and the ballast.

39. A separation assembly for enabling separation of a fluid sample into first and second phases, comprising:

a collection container having a first end, a second end, and a sidewall extending therebetween, the collection container defining a longitudinal axis between the first end and the second end;

a closure adapted for sealing engagement with the first end of the collection container; and

a device comprising a separator having a through-hole defined therethrough, wherein upon applied rotational force to any of the separation assembly, collection container, and separator, the separator transitions from a first position in which the through-hole is in an open position that is not transverse to the longitudinal axis of the collection container for fluid to pass therethrough, to a second position in which the through-hole is in a closed position that is

not parallel with the longitudinal axis of the collection container for preventing fluid from being received therethrough,

wherein a cannula is spaced apart from the separator during introduction of a specimen into the collection container, and

wherein at least a portion of the separator is adapted to deform upon application of rotational force.

40. The separation assembly of claim 39, wherein the cannula does not contact the separator during introduction of the specimen into the collection container.

41. The separation assembly of claim 39, wherein at least a portion of the through-hole is oriented along the longitudinal axis of the collection container in the first position, and wherein at least a portion of the through-hole is oriented transverse to the longitudinal axis of the collection container in the second position.

42. The separation assembly of claim 39, wherein transition of the through-hole from the open position to the closed position coincides with rotation of the separator from the first position to the second position.

43. The separation assembly of claim 39, wherein the separator sealingly engages a portion of the sidewall of the collection container in the second position to prevent flow of fluid therethrough or therearound.

44. The separation assembly of claim 39, wherein the separator comprises a ballast and a float joined to the ballast, the ballast comprising a joining structure for engaging a portion of the float, and at least a portion of the float comprises an outer perimeter having a curved cross-section perpendicular to the through-hole, wherein the outer perimeter of the float forms a seal with the sidewall of the collection container in the second position.

45. The separation assembly of claim 39, wherein the separator comprises a ballast and a float joined to the ballast, the float comprising a joining structure for engaging a

portion of the ballast, and at least a portion of the float comprises an outer perimeter having a curved cross-section perpendicular to the through-hole, wherein the outer perimeter of the float forms a seal with the sidewall of the collection container in the second position.

46. A separation assembly for enabling separation of a fluid sample into first and second phases, comprising:

a collection container having a first end, a second end, and a sidewall extending therebetween;

a closure adapted for sealing engagement with the first end of the collection container; and

a device comprising a body having a through-hole defined therethrough, the device having a first sealing perimeter for providing sealing engagement with a first portion of the collection container while allowing a sample to pass through the through-hole into the collection container, and a second sealing perimeter for providing sealing engagement with a second portion of the collection container while maintaining a barrier for separation between the first and second phases,

wherein the through-hole is defined along a through-axis and the first sealing perimeter and the second sealing perimeter are at different angles with respect to the through-axis.

47. The separation assembly of claim 46, wherein the closure is pierceable by a cannula for introducing a specimen into the collection container and wherein the cannula is spaced apart from the body during introduction of the specimen into the collection container.

48. The separation assembly of claim 47, wherein the cannula does not contact the body during introduction of the specimen into the collection container.

49. A device for separating a fluid sample within a collection container, comprising:

a separator having a generally spheroid shape, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast at an interface, wherein an outer surface of the float at the interface is offset from an outer surface of the ballast at the interface,

wherein the separator defines a through-hole therethrough adapted for fluid to pass therethrough.

50. The device of claim 49, wherein the separator defines at least one slit adjacent the interface.

51. The device of claim 50, wherein the at least one slit is defined between a portion of the float and a portion of the ballast.

52. The device of claim 49, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float at the interface and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast together form the spheroid shape.

53. The device of claim 49, wherein the through-hole is defined in part by the float and in part by the ballast.

54. The device of claim 49, wherein the through-hole has a circular cross-section.

55. The device of claim 49, wherein the through-hole has an elliptical cross-section.

56. The device of claim 49, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to the separator.

57. The device of claim 49, further comprising an initial engagement band circumferentially disposed about at least a portion of the separator.

58. The device of claim 57, wherein the initial engagement band is at least one of continuous and at least partially segmented.

59. The device of claim 57, wherein the initial engagement band and the float are formed of the same material.

60. The device of claim 57, wherein the initial engagement band bisects at least a portion of the ballast.

61. The device of claim 49, wherein the ballast comprises a base portion and a joining structure for engaging a portion of the float.

62. The device of claim 49, wherein the float comprises a joining structure for engaging a portion of the ballast.

63. The device of claim 62, wherein the joining structure provides flexure between the float and the ballast.

64. A device for separating a fluid sample within a collection container, comprising:

a separator having a generally spheroid shape, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, at least a portion of the float is connected to at least a portion of the ballast at an interface, wherein an

outer perimeter of at least one of the float and the ballast is offset with respect to an outer perimeter of the other of the float and the ballast at the interface between the float and the ballast,

wherein the separator defines a through-hole therethrough adapted for fluid to pass therethrough.

65. The device of claim 64, wherein the separator defines at least one slit adjacent the interface.

66. The device of claim 65, wherein the at least one slit is defined between a portion of the float and a portion of the ballast.

67. The device of claim 64, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float at the interface and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast together form the spheroid shape.

68. The device of claim 64, wherein the through-hole is defined in part by the float and in part by the ballast.

69. The device of claim 64, wherein the through-hole has a circular cross-section.

70. The device of claim 64, wherein the through-hole has an elliptical cross-section.

71. The device of claim 64, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to the separator.

72. The device of claim 64, further comprising an initial engagement band circumferentially disposed about at least a portion of the separator.

73. The device of claim 72, wherein the initial engagement band is at least one of continuous and at least partially segmented.

74. The device of claim 72, wherein the initial engagement band and the float are formed of the same material.

75. The device of claim 72, wherein the initial engagement band bisects at least a portion of the ballast.

76. A separation assembly for enabling separation of a fluid sample into first and second phases, comprising:

a collection container having a first end, a second end, and a sidewall extending therebetween, the collection container defining a longitudinal axis between the first end and the second end;

a closure adapted for sealing engagement with the first end of the collection container; and

a separator having a generally spheroid shape, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast at an interface, wherein an outer surface of the float at the interface is offset with respect to an outer surface of the ballast at the interface,

wherein the separator defines a through-hole therethrough adapted for fluid to pass therethrough.

77. The separation assembly of claim 76, wherein the separator defines at least one slit adjacent the interface.

78. The separation assembly of claim 77, wherein the at least one slit is defined between a portion of the float and a portion of the ballast.

79. The separation assembly of claim 76, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float at the interface and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast together form the spheroid shape.

80. The separation assembly of claim 76, wherein the through-hole is defined in part by the float and in part by the ballast.

81. The separation assembly of claim 76, wherein the through-hole has a circular cross-section.

82. The separation assembly of claim 76, wherein the through-hole has an elliptical cross-section.

83. The separation assembly of claim 76, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to any of the separation assembly, collection container, and separator.

84. A separation assembly for enabling separation of a fluid sample into first and second phases, comprising:

a collection container having a first end, a second end, and a sidewall extending therebetween, the collection container defining a longitudinal axis between the first end and the second end;

a closure adapted for sealing engagement with the first end of the collection container; and

a separator having a generally spheroid shape, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, at least a portion of the float is connected to at least a portion of the ballast at an interface, wherein an outer perimeter of at least one of the float and the ballast is offset with respect to an outer perimeter of the other of the float and the ballast at the interface between the float and the ballast,

wherein the separator defines a through-hole therethrough adapted for fluid to pass therethrough.

85. The separation assembly of claim 84, wherein the separator defines at least one slit adjacent the interface.

86. The separation assembly of claim 85, wherein the at least one slit is defined between a portion of the float and a portion of the ballast.

87. The separation assembly of claim 84, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float at the interface and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast together form the spheroid shape.

88. The separation assembly of claim 84, wherein the through-hole is defined in part by the float and in part by the ballast.

89. The separation assembly of claim 84, wherein the through-hole has a circular cross-section.

90. The separation assembly of claim 84, wherein the through-hole has an elliptical cross-section.

91. The separation assembly of claim 84, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to any of the separation assembly, collection container, and separator.

92. A device for separating a fluid sample within a collection container, comprising:

a separator having a through-hole defined therethrough for allowing fluid to pass therethrough, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast,

wherein the separator has a center of mass and a center of volume that is offset from the center of mass and,

wherein at least a portion of the separator is adapted to deform upon application of rotational forces.

93. The device of claim 92, wherein the through-hole defines a through-axis, and wherein the center of mass is offset from the through-axis.

94. The device of claim 93, wherein the center of volume is located within the through-hole.

95. The device of claim 92, wherein at least a portion of the separator has a spheroid shape.

96. The device of claim 92, wherein the through-hole is defined in part by the float and in part by the ballast.

97. The device of claim 92, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction substantially perpendicular to the through-axis upon applied rotational force to the separator.

98. A device for separating a fluid sample within a collection container, comprising:

a separator having a through-hole defined therethrough along a through-axis, the through-hole allowing fluid to pass therethrough, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast, wherein the separator has a center of mass that is offset from the through-axis,

wherein at least a portion of the separator is adapted to deform upon application of rotational forces.

99. The device of claim 98, wherein the center of mass is offset from a center of the through-hole.

100. The device of claim 98, wherein the center of mass is offset from the through-hole.

101. The device of claim 98, wherein a center of volume is located within the through-hole, and is offset from the center of mass.

102. The device of claim 98, wherein at least a portion of the separator has a spheroid shape.

103. The device of claim 98, wherein the through-hole is defined within the float.

104. The device of claim 98, wherein the float is adapted for deformation in a direction substantially perpendicular to the through-axis upon applied rotational force to at least one of the device and the separator.

105. A device for separating a fluid sample within a collection container, comprising:

a separator having a through-hole defined therethrough for allowing fluid to pass therethrough, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast, wherein the separator has a center of volume that is located within the through-hole,

wherein at least a portion of the separator is adapted to deform upon application of rotational forces.

106. The device of claim 105, wherein the center of volume is located on a through-axis of the through-hole.

107. The device of claim 105, wherein the center of volume is offset from a center of mass of the separator.

108. The device of claim 107, wherein the center of mass is offset from a through-axis of the through-hole.

109. The device of claim 107, wherein at least a portion of the separator has a spheroid shape.

110. The device of claim 107, wherein the through-hole is defined in part by the float and in part by the ballast.

111. The device of claim 107, wherein the float is adapted for deformation in a direction substantially perpendicular to a through-axis of the through-hole upon applied rotational force to the separator.

CLAIMS

1. A device for separating a liquid sample within a collection container, comprising:

a separator having an open through-hole defined therethrough, the through-hole defining a first open face at a first end of the separator and a second open face at a second end of the separator, the first end of the separator substantially opposite the second end of the separator, wherein the through-hole is adapted for liquid to pass therethrough, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast,

wherein the float defines a first exterior surface of the separator extending from a portion of the first open face to a portion of the second open face and the ballast defines a second exterior surface, the second exterior surface substantially opposite the first exterior surface and,

wherein in a plane bisecting the separator and extending from the first exterior surface to the second exterior surface and in a direction parallel to a through axis of the through-hole, the through-hole has a first portion where the first open face is a first distance from the second open face and a second portion where the first open face is a second distance from the second open face, the first distance being different from the second distance.

2. The device of claim 1, wherein the first open face and the second open face are defined within the float.

3. The device of claim 1, wherein at least a portion of the device has a spheroid shape.

4. The device of claim 3, wherein the float comprises the first exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining

surface of the float and the second exterior surface, wherein the first exterior surface of the float and the second exterior surface of the ballast taken together form the spheroid shape.

5. The device of claim 1, wherein the through-hole is defined in part by the float and in part by the ballast and is adapted for liquid to pass therethrough.

6. The device of claim 1, wherein the through-hole has a circular cross-section.

7. The device of claim 1, wherein the through-hole has an elliptical cross-section.

8. The device of claim 1, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to the separator.

9. The device of claim 1, further comprising an initial engagement band circumferentially disposed about at least a portion of the separator.

10. The device of claim 9, wherein the initial engagement band is at least one of continuous and at least partially segmented.

11. The device of claim 9, wherein the initial engagement band and the float are formed of the same material.

12. The device of claim 9, wherein the initial engagement band bisects at least a portion of the ballast.

13. The device of claim 1, wherein the ballast comprises a base portion and a joining structure for engaging a portion of the float.

14. The device of claim 13, wherein the joining structure provides flexure between the float and the ballast.

15. The device of claim 1, wherein the float comprises a joining structure for engaging a portion of the ballast.

16. The device of claim 15, wherein the joining structure provides flexure between the float and the ballast.

17. A separation assembly for enabling separation of a liquid sample into first and second phases, comprising:

a collection container having a first end, a second end, and a sidewall extending therebetween, the collection container defining a longitudinal axis between the first end and the second end; and

a device comprising a separator having an open through-hole defined therethrough, the through-hole defining a first open face at a first end of the separator and a second open face at a second end of the separator, the first end of the separator substantially opposite the second end of the separator, wherein the through-hole is adapted for liquid to pass therethrough, the separator having a float, having a first density, and a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast,

wherein the float defines a first exterior surface of the separator extending from a portion of the first open face to a portion of the second open face and the ballast defines a second exterior surface, the second exterior surface substantially opposite the first exterior surface, and

wherein in a plane bisecting the separator and extending from the first exterior surface to the second exterior surface and in a direction parallel to a through axis of the through-hole, the through-hole has a first portion where the first open face is a first distance from the second open face and a second portion where the first open face is a second distance from the second open face, the first distance being different from the second distance.

18. The separation assembly of claim 17, wherein, upon applied force, the separator is adapted to transition from a first position in which the through-hole is in an open position that is not transverse to the longitudinal axis of the collection container for liquid to pass therethrough and into the collection container, to a second position in which the through-hole is in a closed position that is not parallel with the longitudinal axis of the collection container for preventing liquid from being received therethrough.

19. The separation assembly of claim 18, wherein at least a portion of the through-hole is oriented substantially along the longitudinal axis of the collection container in the first position, and wherein at least a portion of the through-hole is oriented transverse to the longitudinal axis of the collection container in the second position.

20. The separation assembly of claim 19, wherein transition of the through-hole from the open position to the closed position coincides with rotation of the separator from the first position to the second position.

21. The separation assembly of claim 19, wherein the device sealingly engages a portion of the sidewall of the collection container in the second position to prevent flow of liquid therethrough or therearound.

22. The separation assembly of claim 18, wherein the ballast comprises a joining structure for engaging a portion of the float, and at least a portion of the float comprises a circular outer perimeter having a curved cross-section perpendicular to the through-hole, wherein the outer perimeter of the float forms a continuous seal with the sidewall of the collection container in the second position.

23. The separation assembly of claim 18, wherein the float comprises a joining structure for engaging a portion of the ballast, and at least a portion of the float comprises a circular outer perimeter having a curved cross-section perpendicular to the through-hole, wherein the outer perimeter of the float forms a continuous seal with the sidewall of the collection container in the second position.

24. An assembly for enabling separation of a liquid sample into first and second phases, comprising:

a collection container having an open end, a closed end, and a sidewall extending therebetween defining an interior, the collection container further defining a longitudinal axis between the open end and the closed end;

a closure adapted for sealing engagement with the open end of the collection container; and

a separator disposed within the collection container and engaged with a portion of the sidewall adjacent the open end in an initial position during introduction of the specimen into the collection container, the separator having a through-hole defined therethrough, extending through the entire separator, said through-hole configured for allowing fluid to pass therethrough, the separator comprising:

a float, having a first density; and

a ballast, having a second density different than the first density, wherein a portion of the float is connected to a portion of the ballast,

wherein the closure is pierceable by a cannula for introducing a specimen into the collection container and wherein the cannula can pass through the through-hole of the separator without contacting the separator during introduction of the specimen into the collection container.

25. The assembly of claim 24, wherein at least a portion of the separator has a spheroid shape.

26. The assembly of claim 25, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast together form the spheroid shape.

27. The assembly of claim 24, wherein the through-hole is defined in part by the float and in part by the ballast and is adapted for fluid to pass therethrough.

28. The assembly of claim 24, wherein the through-hole has a circular cross-section.

29. The assembly of claim 24, wherein the through-hole has an elliptical cross-section.

30. The assembly of claim 24, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to any of the assembly, collection container, and separator.

31. The assembly of claim 24, further comprising an initial engagement band circumferentially disposed about at least a portion of the separator.

32. The assembly of claim 31, wherein the initial engagement band is at least one of continuous and at least partially segmented.

33. The assembly of claim 31 wherein the initial engagement band and the float are formed of the same material.

34. The assembly of claim 31 wherein the initial engagement band bisects at least a portion of the ballast.

35. The assembly of claim 24 wherein the ballast comprises a base portion and a joining structure for engaging a portion of the float.

36. The assembly of claim 24, wherein the float comprises a joining structure for engaging a portion of the ballast.

37. The assembly of claim 36, wherein the joining structure provides flexure between the float and the ballast.

38. A separation assembly for enabling separation of a fluid sample into first and second phases, comprising:

a collection container having a first end, a second end, and a sidewall extending therebetween, the collection container defining a longitudinal axis between the first end and the second end;

a closure adapted for sealing engagement with the first end of the collection container; and

a device comprising a separator having a through-hole defined therethrough, wherein upon applied rotational force to any of the separation assembly, collection container, and separator, the separator transitions from a first position in which the through-hole is in an open position that is not transverse to the longitudinal axis of the collection container for fluid to pass therethrough, to a second position in which the through-hole is in a closed position that is not parallel with the longitudinal axis of the collection container for preventing fluid from being received therethrough,

wherein a cannula is spaced apart from the separator during introduction of a specimen into the collection container,

wherein when the separator is in the first position, a first sealing perimeter engages the sidewall of the collection container while allowing the sample to pass through the through-hole and when the separator is in the second position, a second sealing perimeter sealingly engages the sidewall of the collection container to prevent fluid from passing between the separator and the sidewall and for preventing fluid from passing through the open through-hole, wherein the first sealing perimeter is different from the second sealing perimeter, and

wherein at least a portion of the separator is adapted to deform upon application of rotational force.

39. The separation assembly of claim 38, wherein the cannula does not contact the separator during introduction of the specimen into the collection container.

40. The separation assembly of claim 38, wherein at least a portion of the through-hole is oriented along the longitudinal axis of the collection container in the first position, and wherein at least a portion of the through-hole is oriented transverse to the longitudinal axis of the collection container in the second position.

41. The separation assembly of claim 38, wherein transition of the through-hole from the open position to the closed position coincides with rotation of the separator from the first position to the second position.

42. The separation assembly of claim 38, wherein the separator comprises a ballast and a float joined to the ballast, the ballast comprising a joining structure for engaging a portion of the float, and at least a portion of the float comprises an outer perimeter having a curved cross-section perpendicular to the through-hole, wherein the outer perimeter of the float forms a seal with the sidewall of the collection container in the second position.

43. The separation assembly of claim 38, wherein the separator comprises a ballast and a float joined to the ballast, the float comprising a joining structure for engaging a portion of the ballast, and at least a portion of the float comprises an outer perimeter having a curved cross-section perpendicular to the through-hole, wherein the outer perimeter of the float forms a seal with the sidewall of the collection container in the second position.

44. A separation assembly for enabling separation of a fluid sample into first and second phases, comprising:

a collection container having a first end, a second end, and a sidewall extending therebetween;

a closure adapted for sealing engagement with the first end of the collection container; and

a device comprising a body having a through-hole defined therethrough, the device having a first sealing perimeter for providing sealing engagement with a first portion of the collection container while allowing a sample to pass through the through-hole into the collection container, and a second sealing perimeter for providing sealing engagement with a second portion of the collection container while maintaining a barrier for separation between the first and second phases,

wherein the through-hole is defined along a through-axis and the first sealing perimeter and the second sealing perimeter are at different angles with respect to the through-axis.

45. The separation assembly of claim 44, wherein the closure is pierceable by a cannula for introducing a specimen into the collection container and wherein the cannula is spaced apart from the body during introduction of the specimen into the collection container.

46. The separation assembly of claim 45, wherein the cannula does not contact the body during introduction of the specimen into the collection container.

47. A device for separating a fluid sample within a collection container, comprising:

a separator having a generally spheroid shape, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast at an interface, wherein an outer surface of the float at the interface is offset from an outer surface of the ballast at the interface,

wherein the separator defines a through-hole therethrough adapted for fluid to pass therethrough.

48. The device of claim 47, wherein the separator defines at least one slit adjacent the interface.

49. The device of claim 48, wherein the at least one slit is defined between a portion of the float and a portion of the ballast.

50. The device of claim 47, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float at the interface and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast together form the spheroid shape.

51. The device of claim 47, wherein the through-hole is defined in part by the float and in part by the ballast.

52. The device of claim 47, wherein the through-hole has a circular cross-section.

53. The device of claim 47, wherein the through-hole has an elliptical cross-section.

54. The device of claim 47, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to the separator.

55. The device of claim 47, further comprising an initial engagement band circumferentially disposed about at least a portion of the separator.

56. The device of claim 55, wherein the initial engagement band is at least one of continuous and at least partially segmented.

57. The device of claim 55, wherein the initial engagement band and the float are formed of the same material.

58. The device of claim 55, wherein the initial engagement band bisects at least a portion of the ballast.

59. The device of claim 1, wherein the ballast comprises a base portion and a joining structure for engaging a portion of the float.

60. The device of claim 1, wherein the float comprises a joining structure for engaging a portion of the ballast.

61. The device of claim 60, wherein the joining structure provides flexure between the float and the ballast.

62. A device for separating a fluid sample within a collection container, comprising:

a separator having a generally spheroid shape, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, at least a portion of the float is connected to at least a portion of the ballast at an interface, wherein an outer perimeter of at least one of the float and the ballast is offset with respect to an outer perimeter of the other of the float and the ballast at the interface between the float and the ballast,

wherein the separator defines a through-hole therethrough adapted for fluid to pass therethrough.

63. The device of claim 62, wherein the separator defines at least one slit adjacent the interface.

64. The device of claim 63, wherein the at least one slit is defined between a portion of the float and a portion of the ballast.

65. The device of claim 64, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float at the interface and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast together form the spheroid shape.

66. The device of claim 62, wherein the through-hole is defined in part by the float and in part by the ballast.

67. The device of claim 62, wherein the through-hole has a circular cross-section.

68. The device of claim 62, wherein the through-hole has an elliptical cross-section.

69. The device of claim 62, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to the separator.

70. The device of claim 62, further comprising an initial engagement band circumferentially disposed about at least a portion of the separator.

71. The device of claim 70, wherein the initial engagement band is at least one of continuous and at least partially segmented.

72. The device of claim 70, wherein the initial engagement band and the float are formed of the same material.

73. The device of claim 24, wherein the initial engagement band bisects at least a portion of the ballast.

74. A separation assembly for enabling separation of a fluid sample into first and second phases, comprising:

a collection container having a first end, a second end, and a sidewall extending therebetween, the collection container defining a longitudinal axis between the first end and the second end;

a closure adapted for sealing engagement with the first end of the collection container; and

a separator having a generally spheroid shape, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast at an interface, wherein an outer surface of the float at the interface is offset with respect to an outer surface of the ballast at the interface,

wherein the separator defines a through-hole therethrough adapted for fluid to pass therethrough.

75. The separation assembly of claim 74, wherein the separator defines at least one slit adjacent the interface.

76. The separation assembly of claim 75, wherein the at least one slit is defined between a portion of the float and a portion of the ballast.

77. The separation assembly of claim 74, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float at the interface and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast together form the spheroid shape.

78. The separation assembly of claim 74, wherein the through-hole is defined in part by the float and in part by the ballast.

79. The separation assembly of claim 74, wherein the through-hole has a circular cross-section.

80. The separation assembly of claim 74, wherein the through-hole has an elliptical cross-section.

81. The separation assembly of claim 74, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to any of the separation assembly, collection container, and separator.

82. A separation assembly for enabling separation of a fluid sample into first and second phases, comprising:

a collection container having a first end, a second end, and a sidewall extending therebetween, the collection container defining a longitudinal axis between the first end and the second end;

a closure adapted for sealing engagement with the first end of the collection container; and

a separator having a generally spheroid shape, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, at least a portion of the float is connected to at least a portion of the ballast at an interface, wherein an outer perimeter of at least one of the float and the ballast is offset with respect to an outer perimeter of the other of the float and the ballast at the interface between the float and the ballast,

wherein the separator defines a through-hole therethrough adapted for fluid to pass therethrough.

83. The separation assembly of claim 82, wherein the separator defines at least one slit adjacent the interface.

84. The separation assembly of claim 83, wherein the at least one slit is defined between a portion of the float and a portion of the ballast.

85. The separation assembly of claim 82, wherein the float comprises an exterior surface and a joining surface, and the ballast comprises a contact surface connected to the joining surface of the float at the interface and an exterior surface, wherein the exterior surface of the float and the exterior surface of the ballast together form the spheroid shape.

86. The separation assembly of claim 82, wherein the through-hole is defined in part by the float and in part by the ballast.

87. The separation assembly of claim 82, wherein the through-hole has a circular cross-section.

88. The separation assembly of claim 82, wherein the through-hole has an elliptical cross-section.

89. The separation assembly of claim 82, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction perpendicular to the through-axis upon applied rotational force to any of the separation assembly, collection container, and separator.

90. A device for separating a fluid sample within a collection container, comprising:

a separator having a through-hole defined therethrough for allowing fluid to pass therethrough, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast,

wherein the separator has a center of mass and a center of volume that is offset from the center of mass and,

wherein at least a portion of the separator is adapted to deform upon application of rotational forces.

91. The device of claim 90, wherein the through-hole defines a through-axis, and wherein the center of mass is offset from the through-axis.

92. The device of claim 91, wherein the center of volume is located within the through-hole.

93. The device of claim 91, wherein at least a portion of the separator has a spheroid shape.

94. The device of claim 91, wherein the through-hole is defined in part by the float and in part by the ballast.

95. The device of claim 91, wherein the through-hole is defined along a through-axis and the float is adapted for deformation in a direction substantially perpendicular to the through-axis upon applied rotational force to the separator.

96. A device for separating a fluid sample within a collection container, comprising:

a separator having a through-hole defined therethrough along a through-axis, the through-hole allowing fluid to pass therethrough, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast, wherein the separator has a center of mass that is offset from the through-axis,

wherein at least a portion of the separator is adapted to deform upon application of rotational forces.

97. The device of claim 96, wherein the center of mass is offset from a center of the through-hole.

98. The device of claim 96, wherein the center of mass is offset from the through-hole.

99. The device of claim 96, wherein a center of volume is located within the through-hole, and is offset from the center of mass.

100. The device of claim 96, wherein at least a portion of the separator has a spheroid shape.

101. The device of claim 96, wherein the through-hole is defined within the float.

102. The device of claim 96, wherein the float is adapted for deformation in a direction substantially perpendicular to the through-axis upon applied rotational force to at least one of the device and the separator.

103. A device for separating a fluid sample within a collection container, comprising:

a separator having a through-hole defined therethrough for allowing fluid to pass therethrough, the separator comprising:

a float, having a first density; and

a ballast, having a second density greater than the first density, wherein a portion of the float is connected to a portion of the ballast, wherein the separator has a center of volume that is located within the through-hole,

wherein at least a portion of the separator is adapted to deform upon application of rotational forces.

104. The device of claim 103, wherein the center of volume is located on a through-axis of the through-hole.

105. The device of claim 103, wherein the center of volume is offset from a center of mass of the separator.

106. The device of claim 105, wherein the center of mass is offset from a through-axis of the through-hole.

107. The device of claim 103, wherein at least a portion of the separator has a spheroid shape.

108. The device of claim 103, wherein the through-hole is defined in part by the float and in part by the ballast.

109. The device of claim 103, wherein the float is adapted for deformation in a direction substantially perpendicular to a through-axis of the through-hole upon applied rotational force to the separator.