CLAIMS

I claim:

1. A system for supporting a medical device, the system comprising:

    a stabilizing base comprising:

        a base plate;

        a post attached to the base plate; and

        a platform attached to the post;

    a stabilizing system for receiving the medical device, wherein the stabilizing system is removably attachable to the platform; and

    wherein the vertical, horizontal, and radial position of the platform are adjustable relative to the base plate.

2. The system of claim 1, wherein the stabilizing system is connected to the platform via metal plates.

3. The system of any of claims 1-2, wherein the post further comprises an outer portion and an inner portion movably disposed within said outer portion.

4. The system of claim 3, further comprising a gas spring mechanism to adjust the vertical position of the inner portion of the post.

5. The system of any of claim 1-2, further comprising a first and a second post plates, wherein the first and second post plates are parallel to one another and extend vertically downward from the platform on either side of the post.

6. The system of claim 5, further comprising a knob mechanism that extends through the first and second post plates and the post.

7. The system of any of claims 1-2, further comprising a post cover extending downward from the platform.

8. The system of claim 7, further comprising a mechanism to control the height of the platform relative to the base plate.

9. The system of claim 8, wherein the mechanism is an electromechanical mechanism.

10. The system of any of claims 1-9, wherein the stabilizing system is a rail system for receiving the medical device, wherein the rail system is removably attachable to the platform.

11. The system of any of claims 1-10, wherein the medical device is a delivery system couplable to the stabilizing system, and the system includes the delivery system.

12. A system comprising:

a stabilizing base comprising:

a base plate; and

a post attached to the base plate;

a platform attached to the post, wherein the vertical, horizontal, and radial position of the platform are adjustable relative to the base plate; and

a stabilizing system comprising a rail system, the stabilizing system removably attachable to the platform; and

a catheter assembly attached to the rail system.

13. The system of claim 12 further comprising a valve repair device coupled to the catheter assembly.

14. The system of claim 12 further comprising a replacement valve coupled to the catheter assembly.

15. The system of claim 12 further comprising an annuloplasty band coupled to the catheter assembly.

16. The system of claim 12 the rail system is connected to the platform via metal plates.

17. The system of any of claims 12-16, wherein the post further comprises an outer portion and an inner portion movably disposed within said outer portion.

~~18. The system of claim 16, further comprising a gas spring mechanism to adjust the vertical position of the inner portion of the post.~~

~~19. The system of any of claim 12-16, further comprising a first and a second post plates, wherein the first and second post plates are parallel to one another and extend vertically downward from the platform on either side of the post.~~

~~20. The system of claim 19, further comprising a knob mechanism that extends through the first and second post plates and the post.~~

~~21. The system of any of claims 12-16, further comprising a post cover extending downward from the platform.~~

~~22. The system of claim 21, further comprising a mechanism to control the height of the platform relative to the base plate.~~

~~23. The system of claim 22, wherein the mechanism is an electromechanical mechanism.~~

~~24. A system for supporting a medical device, the system comprising:~~

~~a stabilizing base comprising:~~

~~a frame; and~~

~~at least one track portion;~~

~~a stabilizing system for receiving the medical device, wherein the stabilizing system is removably attachable to the frame;~~

~~wherein the vertical, horizontal, and radial position of the rail system is adjustable relative to the frame; and~~

~~wherein the stabilizing system is movably coupled to the at least one track portion of the frame.~~

~~25. The system of claim 24, wherein the frame further comprises a first and second track portion, and a first and second support member, wherein the first and second support members are attached to the at least one track member such that the position of the track portion can be adjusted relative to the support members.~~

26. The system of claim 24, wherein the frame comprises a first support member and a second support member.

27. The system of claim 26, wherein the first and second support members are horizontal bars that extend parallel to one another, and wherein the first and second support members are attached to the track portion such that the vertical position of the track portion can be adjusted relative to the support members.

28. The system of any of claims 24-27, wherein the stabilizing system is a rail system for receiving the medical device.

29. The system of any of claims 24-28, wherein the medical device is a delivery system couplable to the stabilizing system, and the system includes the delivery system.

30. A system comprising:

a stabilizing base comprising:

a frame; and

at least one track portion;

a stabilizing system removably attached to the frame and comprising a rail system;

wherein the vertical, horizontal, and radial position of the rail system are adjustable relative to the frame;

wherein the rail system is movably attached to the at least one track portion of the frame; and

a catheter assembly couple to the stabilizing system.

31. The system of claim 30 further comprising a valve repair device coupled to the catheter assembly.

32. The system of claim 30 further comprising a replacement valve coupled to the catheter assembly.

33. The system of claim 30 further comprising an annuloplasty band coupled to the catheter assembly.

34. The system of claim 33, wherein the frame further comprises a first and second track portion, and a first and second support member, wherein the first and second support members are attached to the at least one track member such that the position of the track portion can be adjusted relative to the support members.

35. The system of claim 30, wherein the frame comprises a first and second support member.

36. The system of claim 35, wherein the first and second support members are horizontal bars that extend parallel to one another, and wherein the first and second support members are attached to the track portion such that the vertical position of the track portion can be adjusted relative to the support members.

37. A system for supporting a medical device, the system comprising:

a stabilizing base comprising

an arm;

a mount configured to attach the arm to an operating table;

a stabilizing system for receiving the medical device, wherein the stabilizing system is removably attached to the arm, and wherein the vertical, horizontal, and radial position of the stabilizing system is adjustable relative to the mount.

38. The system of claim 37, wherein the arm comprises first and second segments that are movably attached to one another.

39. The system of any one of claims 37-38, wherein the stabilizing system comprises a rail system for receiving the medical device, wherein the rail system is removably attachable to the arm, and wherein the vertical, horizontal, and radial position of the rail system is adjustable relative to the mount

40. The system of any of claims 37-39, wherein the medical device is a delivery system couplable to the stabilizing system, and the system includes the delivery system.

41. A system comprising:

a stabilizing base comprising:

an arm; and

a mount configured to attach the arm to an operating table;

a stabilizing system attached to the arm and comprising a rail system;

wherein the vertical, horizontal, and radial position of the rail system is adjustable relative to the mount; and

a catheter assembly attached to the rail system.

42. The system of claim 41 further comprising a valve repair device coupled to the catheter assembly.

43. The system of claim 41 further comprising a replacement valve coupled to the catheter assembly.

44. The system of claim 41 further comprising an annuloplasty band coupled to the catheter assembly.

45. The stabilizing system of any of claims 41-44, wherein the arm comprises first and second segments that are movably attached to one another.

46. A system comprising:

a stabilizing mat comprising:

a first ridge and a second ridge;

a channel between the first and second ridge;

a catheter assembly positionable in the channel.

47. The system of claim 46 further comprising a valve repair device coupled to the catheter assembly.

48. The system of claim 46 further comprising a replacement valve coupled to the catheter assembly.

~~49. The system of claim 46 further comprising an annuloplasty band coupled to the catheter assembly.~~

~~50. The system of any of clams 46-49 wherein the channel is sized to prevent rotation of the catheter assembly.~~

~~51. A stabilizing system for supporting a medical device, the stabilizing system comprising:~~

~~a mat, the mat comprising:~~

~~a first wing;~~

~~a second wing; and~~

~~channel disposed between the first and second wings; and~~

~~a rail system secured within the channel.~~

~~52. A system comprising:~~

~~a mat comprising:~~

~~a first wing;~~

~~a second wing; and~~

~~a channel disposed between the first and second wings;~~

~~a rail disposed in the channel; and~~

~~a catheter assembly attached to the rail.~~

~~53. The system of claim 52 further comprising a valve repair device coupled to the catheter assembly.~~

~~54. The system of claim 52 further comprising a replacement valve coupled to the catheter assembly.~~

~~55. The system of claim 52 further comprising an annuloplasty band coupled to the catheter assembly.~~

56. A system for supporting a medical device, the system comprising:

a stabilizing base comprising:

a plurality of legs; and

a platform attached to the plurality of legs;

a stabilizing system for receiving the medical device, wherein the stabilizing system is removably attachable to the platform; and

wherein one or more of the plurality of legs is adjustable to change one or more of a vertical, horizontal, and angular position of the platform.

57. The system of claim 56, wherein the stabilizing system is connected to the platform via metal plates.

58. The system of any of claims 56-57, wherein one or more of the plurality of legs comprise an outer portion and an inner portion movably disposed within said outer portion.

59. The system of claim 58, wherein one or more of the plurality of legs comprise a gas spring mechanism to adjust the vertical position of the inner portion relative to the outer portion.

60. The system of any of claim 56-57, further comprising a first plate and a second plate, wherein the first plate and the second plate are parallel to one another and extend vertically downward from the platform on either side of the platform.

61. The system of claim 60, further comprising a knob mechanism that extends through at least one of the first plate and the second plate.

62. The system of any of claims 56-57, further comprising a mechanism to control the length of one or more of the plurality of legs.

63. The system of claim 62, wherein the mechanism is an electromechanical mechanism.

64. The system of any of claims 56-63, wherein the stabilizing system is a rail system for receiving the medical device, wherein the rail system is removably attachable to the platform.

65. The system of any of claims 56-64, wherein the medical device is a delivery system couplable to the stabilizing system, and the system includes the delivery system.

66. The system of any of claims 56–65, wherein the plurality of legs comprises a first pair of legs and a second pair of legs.

67. The system of any of claims 56–66, wherein the first pair of legs and the second pair of legs are foldable between stowed and deployed position.

68. The system of any of claims 56–67, further comprising a first strut for retaining the first pair of legs in the deployed position and a second strut for retaining the second pair of legs in the deployed position, wherein the first strut and the second strut are slideably attached to the platform and can be released to facilitate folding of the first and second pairs of legs from the deployed to the stowed position.

69. The system of any of claims 56–68, further comprising a first height adjustment knob for adjusting the height of the legs of the first pair of legs and a second height adjustment knob for adjusting the height of the legs of the second pair of legs.

70. The system of any of claims 56–69, wherein each of the first pair of legs and the second pair of legs comprise:

an actuation shaft, a pair of drive gears, a pair of driven gears, and a pair of extension shafts; and

extendable portions of each support leg are attached to the extension shafts;

wherein the drive gears are fixedly attached to the actuation shaft and the driven gears are fixedly attached to the extension shafts; and

wherein rotating one of the first and second height adjustment knobs rotates both of the extension shafts via the drive gears and driven gears to increase and decrease the height of the support legs.

71. The system of any of claims 66–70, wherein the platform can be tilted by adjusting the height of the first pair of support legs to a lower height than the height of the second pair of support legs.

~~72. The system of any of claims 56–71, wherein each of the support legs comprises a tilting foot.~~

~~73. A system for supporting a medical device, the system comprising:~~

~~a base plate;~~

~~a first strut and a second strut hingeably attached to the baseplate, wherein each of the first and second struts comprises a longitudinal slot;~~

~~a pivot that is slidable within the slots of the first and second struts; and~~

~~a platform comprising a plurality of first brackets for receiving an upper end of the first strut and a plurality of second brackets for receiving an upper end of the second strut;~~

~~a stabilizing system for receiving the medical device, wherein the stabilization system is removably attachable to the platform; and~~

~~wherein the pivot can be repositioned in the slots of the first and second struts and the first and second struts can be attached to first brackets and second brackets of the platform to allow the platform to tilt forward.~~

~~74. The system of claim 73, wherein the platform is level when the upper ends of the first and second struts are equidistant from the pivot.~~

~~75. The system of any of claims 73–74, wherein the platform is tilted when the upper ends of the first and second struts are different distances from the pivot.~~

~~76. The system of any of claims 73–75, further comprising a hinge mechanism that comprises:~~

~~a first locking pin for engaging a first locking hole;~~

~~a second locking pin for engaging a second locking hole; and~~

~~a release lever for disengaging at least one of the first locking pin and the second locking pin from the first and second locking holes;~~

~~wherein the first locking pin engages the first locking hole when the platform is in a level condition; and~~

~~wherein the second locking pin engages the second locking hole when the platform is in a tilted condition.~~

~~77. The system of any of claims 1–23, wherein the post comprises:~~

~~a fixed portion extending from the base plate and comprising a latch pin; and~~

~~a moveable portion extending from the platform and comprising a plurality of latch holes for receiving the latch pin of the fixed portion.~~

~~78. The system of claim 75, wherein the fixed portion is removably attached to the baseplate with a clamp.~~

~~79. The system of any of claims 73–76, wherein the mount attaches to a side rail of the operating table.~~

~~80. The system of claim 79, wherein the mount comprises first and second mounts for attaching to first and second side rails of the operating table.~~

~~81. The system of any of claims 79–80, wherein the arm further comprises a vertical portion that is vertically repositionable relative to the mount.~~

~~82. The system of any of claims 79–81, wherein the arm further comprises a vertical portion that can be extended and retracted vertically.~~

~~83. The system of any of claims 81–82, wherein the vertical portion comprises a rotatable portion and a repositionable hinge that allows the rotatable portion to be pivoted relative to a vertical axis of the vertical portion of the arm.~~

~~84. The system of claim 83, wherein the hinge includes a clamp for securing the rotatable portion at a desired pivot angle.~~

~~85. The system of any of claims 79–84, wherein the arm comprises a horizontal portion and a carriage that slides laterally along the horizontal portion.~~

~~86. The system of claim 85, wherein the stabilizing system is attached to the carriage.~~

~~87. The system of any of claims 79–86, wherein the system is moveable to a stowed condition at a side or an end of the operating table.~~

88. The system of any of claims 79–87, wherein a tilt angle of at least a portion of the arm is at a fixed pivot angle relative to a top of the operating table.

89. A system for supporting a medical device, the system comprising:

a stabilizing base comprising:

a plurality of support posts; and

a frame attached to the plurality of support posts; and

a platform hingeably attached to the frame; and

a stabilizing system for receiving the medical device, wherein the stabilizing system is removably attachable to the platform; and

wherein one or more of the plurality of posts is adjustable to change a vertical, horizontal, and/or angular position of the platform.

90. The system of claim 89, wherein the support posts comprise fixed and moveable portions, wherein latch pins of the moveable portion engage latch holes of the fixed portion to maintain the support posts at a desired height.

91. The system of any of claims 89–90, wherein the support posts comprise handles for releasing the latch pins to facilitate vertical movement of the moveable portions relative to the fixed portions of the support posts to move the frame vertically up and down.

92. The system of claim 91, wherein moving the handles upward causes the latch pins to move horizontally outwards to disengage from latch holes.

93. The system of any of claims 89–92, wherein the frame can only move vertically when both of the handles are actuated.

94. The system of any of claims 89–93, wherein the platform is configured to pivot from a level condition to a tilted condition.

95. The system of claim 94, wherein the tilted condition is about 10 degrees to about 15 degrees above the level condition.

~~96. The system of any of claims 89–95, wherein the frame comprises an actuation knob for rotating a cam, wherein the cam can be rotated to engage the platform and cause the platform to pivot from the level condition to the tilted condition.~~

~~97. The system of any of claims 89–96, wherein a pivot axis of the platform is arranged proximal a front member of the frame.~~

~~98. The system of any of claims 67–72, further comprising a retaining member for retaining each of the plurality of support legs in the stowed position.~~

~~99. The system of claim 98, wherein the retaining member is attached to a bottom cover of the platform.~~

~~100. The system of any of claims 98–99, wherein the retaining member comprises an elastomeric pad.~~

~~101. The system of any of claims 98–100, further comprising a latch mechanism for prohibiting the rotation of the first pair of legs and the second pair of legs when the first pair of legs and the second pair of legs are in the stowed position and the deployed position.~~

~~102. The system of claim 101, wherein the latch mechanism comprises:~~

~~rotating catch members extending between the support legs of the first pair of legs and the support legs of the second pair of legs; and~~

~~sliding latch members that engage the rotating catch members to prohibit rotation of the rotating catch members.~~

~~103. The system of any of claims 101–102, further comprising a tightening screw that engages extension members of the rotating catch members.~~

1. A system for supporting a medical device, the system comprising:

a stabilizing base comprising:

a plurality of legs;

a platform attached to the plurality of legs;

a stabilizing system for receiving the medical device, wherein the stabilizing system is removably attachable to the platform; and

wherein one or more of the plurality of legs is adjustable to change one or more of a vertical, horizontal, and angular position of the platform.

2. The system of claim 1, wherein one or more of the plurality of legs comprise an outer portion and an inner portion movably disposed within said outer portion.

3. The system of claim 1, further comprising a first plate and a second plate, wherein the first plate and the second plate are parallel to one another and extend vertically downward from the platform on either side of the platform.

4. The system of claim 3, further comprising a knob mechanism that extends through at least one of the first plate and the second plate.

5. The system of claim 1, further comprising a mechanism to control the height of one or more of the plurality of legs.

6. The system of claim 1, wherein the stabilizing system is a rail system for receiving the medical device, wherein the rail system is removably attachable to the platform.

7. The system of claim 1, wherein the medical device is a delivery system couplable to the stabilizing system, and the system includes the delivery system.

8. The system of claim 1, wherein the plurality of legs comprises a first pair of legs and a second pair of legs.

9. The system of claim 8, wherein the first pair of legs and the second pair of legs are foldable between a stowed position and a deployed position.

10. The system of claim 9, further comprising a first strut for retaining the first pair of legs in the deployed position and a second strut for retaining the second pair of legs in the deployed position, wherein the first strut and the second strut are slideably attached to the platform and can be released to facilitate folding of the first and second pairs of legs from the deployed to the stowed position.

11. The system of claim 8, further comprising a first height adjustment knob for adjusting the height of the legs of the first pair of legs and a second height adjustment knob for adjusting the height of the legs of the second pair of legs.

12. The system of claim 8 further comprising:

a first height adjustment knob, a second height adjustment knob, an actuation shaft, a pair of drive gears, a pair of driven gears, and a pair of extension shafts;

extendable portions of each support leg are attached to the extension shafts;

wherein the drive gears are fixedly attached to the actuation shaft and the driven gears are fixedly attached to the extension shafts; and

wherein rotating one of the first height adjustment knob and the second height adjustment knob rotates both of the extension shafts via the drive gears and driven gears to increase and decrease the height of the legs.

13. The system of claim 8, wherein the platform can be tilted by adjusting the height of the first pair of support legs to a lower height than the height of the second pair of legs.

14. The system of claim 9, further comprising a retaining member for retaining each of the plurality of legs in the stowed position.

15. The system of claim 14, wherein the retaining member is attached to a bottom cover of the platform.

16. A system for supporting a medical device, the system comprising:

a stabilizing base comprising:

a first pair of legs;

a second pair of legs;

a platform attached to the first pair of legs and the second pair of legs;

wherein each leg of the first pair of legs and the second pair of legs comprises an outer portion and an inner portion movably disposed within said outer portion;

a first knob coupled to the first pair of legs configured to adjust the height of the first pair of legs;

a second knob coupled to the second pair of legs configured to adjust the height of the second pair of legs;

wherein the first pair of legs are pivotable between a stowed position and a deployed position;

wherein the second pair of legs are pivotable between a stowed position and a deployed position;

a stabilizing system for receiving the medical device, wherein the stabilizing system is removably attachable to the platform; and

wherein the height of the first pair of legs and the height of the second pair of legs are each in independently adjustable to change a vertical position of the platform, a horizontal position of the platform, and angular position of the platform.

17. The system of claim 16, further comprising a first strut for retaining the first pair of legs in the deployed position and a second strut for retaining the second pair of legs in the deployed position, wherein the first strut and the second strut are slideably attached to the platform and can be released to facilitate folding of the first and second pairs of legs from the deployed to the stowed position.

18. The system of claim 16, wherein each of the first pair of legs and the second pair of legs comprise:

an actuation shaft, a pair of drive gears, a pair of driven gears, and a pair of extension shafts;

extendable portions of each support leg are attached to the extension shafts;

wherein the drive gears are fixedly attached to the actuation shaft and the driven gears are fixedly attached to the extension shafts; and

wherein rotating one of the first knob and the second knob rotates both of the extension shafts via the drive gears and driven gears to increase and decrease the height of the legs.

19. The system of claim 16, wherein the platform can be tilted by adjusting the height of the first pair of support legs to a lower height than the height of the second pair of legs.

20. A system for supporting a medical device, the system comprising:

a stabilizing base comprising:

an arm;

a mount configured to attach the arm to an operating table; and

a stabilizing system for receiving the medical device, wherein the stabilizing system is removably attached to the arm, and wherein the vertical, horizontal, and radial position of the stabilizing system is adjustable relative to the mount.

21. A system comprising:

a stabilizing mat comprising:

a first ridge and a second ridge;

a channel between the first ridge and the second ridge; and

a catheter assembly positionable in the channel.