WHAT IS CLAIMED IS:

1. A device for making valves of a vessel incompetent, the device comprising:

a proximal portion;

a distal portion; and

a longitudinal axis between the proximal portion and the distal portion,

wherein the distal portion comprises:

at least one blade, the at least one blade having a retracted position in which the at least one blade is substantially parallel to the longitudinal axis and an expanded position in which the at least one blade is substantially non-parallel to the longitudinal axis, the at least one blade comprising a sharp surface facing distally and configured to at least partially ablate a valve in a vessel during distal advancement of the device through the vessel, thereby facilitating the device to ablate the valve while the device is advanced in a direction opposite native flow of the vessel.

2. The device of Claim 1, configured to be pushed through the vessel in a direction opposite native fluid flow of the vessel from a fistula between the vessel and an artery to at least partially ablate the valve in the vessel without retrograde access.

3. The device of Claim 1 or 2, wherein the at least one blade comprises a plurality of blades.

4. The device of Claim 3, wherein the plurality of blades comprises three blades.

5. The device of Claim 4, wherein the three blades are circumferentially spaced by about 120 degrees.

6. The device of Claim 3, wherein the plurality of blades comprises two blades.

7. The device of Claim 3, wherein the plurality of blades comprises four blades.

8. The device of Claim 3, wherein the plurality of blades comprises five blades.

9. The device of any one of Claims 1 to 8, wherein the proximal portion comprises a handle configured to operate the at least one blade between the retracted position and the expanded position.

10. The device of Claim 9, wherein the at least one blade comprises shape memory material and wherein the handle is configured to allow the at least one blade to self-expand from the retracted position to the expanded position.

11. The device of Claim 9, wherein the handle is configured to longitudinally compress and radially expand the at least one blade from the retracted position to the expanded position.

12. A kit comprising:

the device of any one of Claims 1 to 11; and

a vessel expansion device.

13. The kit of Claim 12, wherein the vessel expansion device comprises at least one of: a tourniquet, a balloon, and a LeMaitre device.

14. The kit of Claim 12 or 13, configured to ablate the at least one valve expended by the vessel expansion device.

15. The device of Claim 1, configured to be pushed through the vessel in a direction of fluid flow of the vessel after forming a fistula between the vessel and an artery to at least partially ablate the valve in the vessel without retrograde access.

WHAT IS CLAIMED IS:

1. An implantable device for treating a vessel occlusion, the device comprising:

a first end portion having a first end diameter, the first end portion comprising a first material, wherein the first end portion is configured to at least partially reside in a first passage;

a second end portion having a second end diameter smaller than the first end diameter, the second end portion comprising a second material different than the first material, wherein the second end portion is configured to at least partially reside in a second passage, one of the first passage and the second passage comprising the vessel occlusion;

an intermediate portion between the first end portion and the second end portion, the intermediate portion tapering between the first end portion and the second end portion, wherein the intermediate portion is configured to at least partially reside in a passage between the first passage and the second passage; and

a graft material coupled to at least the intermediate portion, wherein the graft material is configured to inhibit perfusion through sidewalls of the device.

2. The device of Claim 1, wherein at least one of the first end portion and the second end portion is substantially cylindrical.

3. The device of Claim 2, wherein the first end portion is substantially cylindrical and the second end portion is substantially cylindrical.

4. The device of Claim 1, wherein the first end portion tapers between the first end diameter and the intermediate portion, or wherein the second end portion tapers between the second end diameter and the intermediate portion.

5. The device of Claim 4, wherein the first end portion tapers between the first end diameter and the intermediate portion and the second end portion tapers between the second end diameter and the intermediate portion.

6. The device of Claim 1, wherein at least one of the first material and the second material comprises cut struts, wherein at least one of the first material and the second material comprises a shape memory material, and wherein the intermediate portion tapers between the first end portion and the second end portion.

7. The device of Claim 1, wherein the first material comprises nitinol and the second material comprises chromium cobalt.

8. The device of Claim 1, wherein the first material comprises nitinol and the second material comprises stainless steel.

9. The device of Claim 1, wherein the intermediate portion comprises nitinol.

10. The device of Claim 1, wherein the first end portion comprises cut struts and the second end portion comprises filaments.

11. The device of Claim 1, wherein the first end portion comprises cut struts and the second end portion comprises cut struts.

12. The device of Claim 1, wherein the first material comprises an alloy and the first end portion comprises struts or filaments having a first thickness, and wherein the second material comprises the alloy and the second end potion comprises struts or filaments having a second thickness different than the first thickness.

13. The device of Claim 1, wherein the first type of material comprises a first cut material, the second type of material comprises a second cut material, wherein the intermediate portion comprises a third type of material, and wherein the third type of material comprising filaments.

14. The device of Claim 1, wherein the first type of material comprises a cut material, the second type of material comprises the cut material, wherein the intermediate portion comprises a third type of material, and wherein the third type of material comprising filaments.

15. The device of any one of Claims 1-14, wherein at least one of the first end portion, the second end portion, the intermediate portion, and the graft material comprises a bioabsorbable material.

16. The device of any one of Claims 1-14, wherein at least some of the graft material is outside the intermediate portion, at least some of the graft material is inside the intermediate portion, or at least some of the graft material is embedded within the intermediate portion.

17. A method comprising deploying the device of any one of Claims 1-14 in a third passage between the first vessel and the second vessel.

18. A method of diverting fluid flow from a first passage to a second passage, at least one of the first passage and the second passage comprising a vessel occlusion, the method comprising:

deploying a device in a third passage between the first passage and the second passage, the device comprising;

a first end portion having a first end diameter, the first end portion comprising a first material;

a second end portion having a second end diameter larger than the first end diameter the second end portion comprising a second material different than the first material;

an intermediate portion between the first end portion and the second end portion, the intermediate portion tapering between the first end portion and the second end portion; and

a graft material coupled to at least the intermediate portion, the graft material inhibiting perfusion through sidewalls of the device;

expanding the first end portion against sidewalls of the first passage; and

expanding the second end portion against sidewalls of the second passage.

19. The method of Claim 18, wherein the first passage is an artery and the second passage is a vein.

20. The method of Claim 18, further comprising dilating the third passage.

21. The method of Claim 20, wherein dilating the third passage comprises expanding the intermediate portion.

22. The method of Claim 18, wherein the first passage is substantially parallel to the second passage.

23. The method of Claim 18, wherein expanding the first end portion and the second end portion comprises allowing self-expansion of the first end portion and the second end portion.

24. The method of Claim 18, wherein expanding the first end portion and the second end portion comprises balloon expanding at least one of the first end portion and the second end portion.

25. The method of Claim 18, wherein expanding one of the first end portion and the second end portion comprises allowing self-expansion of the one of the first end portion and the second end portion and wherein expanding the other of the first end portion and the second end portion comprises balloon expanding the other of the first end portion and the second end portion.

26. The method of Claim 18, further comprising expanding the intermediate portion.

27. The method of any one of Claims 18-26, further comprising forming the third passage.

28. The method of Claim 27, further comprising making valves in the second passage incompetent.

29. The method of Claim 28, wherein making the valves in the second passage incompetent comprises at least one of advancing and retracting a catheter comprising a traumatic tip in the second passage.

30. A method of effecting retroperfusion in a first vessel, the method comprising:

forming a fistula between the first vessel and a second vessel; and

making valves in the second vessel incompetent.

31. The method of Claim 30, wherein the second vessel comprises a vein and the first vessel comprises an artery.

32. The method of Claim 30, wherein forming the fistula between the first vessel and the second vessel comprises accessing the vein, wherein accessing the vein comprises:

inserting a needle into the vein; and

inserting a guidewire into the vein through the needle.

33. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises at least one of advancing and retracting a catheter comprising a traumatic tip.

34. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises:

expanding the second vessel and the valves in the second vessel;

advancing a guidewire through the second vessel; and

tracking a device over the guidewire.

35. The method of Claim 34, wherein expanding the second vessel and the valves in the second vessel comprises applying a tourniquet to a body part comprising the second vessel.

36. The method of Claim 34, wherein expanding the second vessel and the valves in the second vessel comprises expanding a balloon in the second vessel.

37. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises inflating a balloon to a pressure greater than about 1,013 kPa across the valves.

38. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises deploying at least one stent across the valves.

39. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises inflating a cutting balloon.

40. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises atherectomy.

41. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises ablating the valves with ultrasound.

42. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises ablating the valves with a laser.

43. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises ablating the valves with radio frequency.

44. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises heating the valves.

45. The method of Claim 30, wherein making the valves in the second vessel incompetent comprises applying a tourniquet to a body part comprising the vessel.

46. The method of any one of Claims 30-45, wherein forming the fistula between the first vessel and the second vessel comprises:

inserting a launching catheter into the second vessel, the launching catheter comprising:

an ultrasound emitting transducer, and

a needle configured to radially extend from the launching catheter;

inserting a target catheter into the first vessel, the target catheter comprising an ultrasound receiving transducer;

emitting an ultrasound signal from the ultrasound emitting transducer;

during emitting the ultrasound signal and until the ultrasound signal is received by the ultrasound receiving transducer, at least one of:

rotating the launching catheter, and

longitudinally moving the launching catheter; and

after the ultrasound signal is received by the ultrasound receiving transducer, extending the needle from the launching catheter, wherein extending the needle comprises:

exiting the second vessel,

traversing interstitial tissue between the second vessel and the first vessel, and

entering the first vessel.

47. The method of Claim 46, wherein the ultrasound emitting transducer comprises a directional transducer.

48. The method of Claim 47, wherein the needle is configured to radially extend from the launching catheter along a path aligned with a path of the directional transducer.

49. The method of Claim 46, wherein the ultrasound receiving transducer comprises an omnidirectional transducer.

50. The method of Claim 46, wherein forming the fistula between the first vessel and the second vessel comprises identifying signal alignment peaks on a display device.

51. The method of Claim 50, wherein identifying the signal alignment peaks on the display device comprises identifying a color indicative that the signal alignment peaks are greater than a threshold value.

52. The method of Claim 46, wherein forming the fistula between the first vessel and the second vessel comprises identifying an audible signal indicative that signal alignment is greater than a threshold value.

53. The method of Claim 30-45, wherein forming the fistula between the first vessel and the second vessel comprises:

inserting a launching catheter into the second vessel, the launching catheter comprising a needle configured to radially extend from the launching catheter;

inserting a target catheter into the first vessel, the target catheter comprising a target device;

expanding the target device;

extending the needle from the launching catheter, wherein extending the needle comprises:

exiting the second vessel,

traversing interstitial tissue between the second vessel and the first vessel, and

entering the first vessel, wherein, during entering the first vessel, the needle punctures the target device.

54. The method of any one of Claims 30-45, wherein the target device comprises a balloon.

55. The method of Claim 54, wherein the balloon comprises:

a polymer; and

a mesh at least partially embedded in the polymer.

56. The method of Claim 54, wherein expanding the target device comprises inflating the balloon.

57. The method of any one of Claims 30-45, wherein the target device comprises a mesh.

58. The method of Claim 57, wherein expanding the target device comprises distally advancing a proximal portion of the mesh.

59. The method of Claim 57, wherein expanding the target device comprises proximally retracting a distal portion of the mesh.

60. The method of Claim 57, wherein expanding the target device comprises allowing the mesh to self-expand.

61. The method of any one of Claims 30-45, wherein forming the fistula between the first vessel and the second vessel comprises inserting a crossing guidewire through the fistula.

62. The method of any one of Claims 30-45, wherein forming the fistula between the first vessel and the second vessel comprises dilating the fistula.

63. The method of Claim 62, wherein dilating the fistula comprises inflating a balloon.

64. The method of any one of Claims 30-45, wherein forming the fistula between the first vessel and the second vessel comprises deploying a prosthesis, wherein after deploying the prosthesis at least a first portion of the prosthesis is in the first vessel and at least a second portion of the prosthesis is in the second vessel.

65. The method of Claim 64, wherein deploying the prosthesis comprises actuating a trigger handle.

66. The method of Claim 64, wherein the prosthesis comprises a stent graft.

67. The method of Claim 65, wherein the stent graft comprises a longitudinal portion having a frustoconical longitudinal cross-section.

68. The method of Claim 64, wherein deploying the prosthesis comprises allowing the prosthesis to self-expand.

69. The method of Claim 64, further comprising expanding the prosthesis with a balloon.

70. The method of any one of Claims 30-45, further comprising applying a radiopaque clip to skin outside the skin proximate to a position of the fistula.

71. The method of Claims 30-45, further comprising determining a distance between the first vessel and the second vessel.

72. A target catheter for forming a fistula, the catheter comprising:

a proximal portion; and

a distal portion,

wherein the distal portion comprises:

an expandable member, and

an ultrasound receiving transducer proximate to the expandable member.

73. The catheter of Claim 72, wherein the expandable member comprises a balloon.

74. The catheter of Claim 72, wherein the expandable member comprises a mesh.

75. The catheter of Claim 72, wherein the ultrasound receiving transducer comprises an omnidirectional transducer.

76. The catheter of Claim 72, wherein the ultrasound receiving transducer is radially inward of the expandable member.

77. The catheter of Claim 72, further comprising an inflation lumen, the inflation lumen in fluid communication with the expandable member and the proximal portion.

78. The catheter of any one of Claims 72-77, further comprising a pressure sensor configured to detect puncturing of the expandable member.

79. A device for making valves of a vessel incompetent, the device comprising:

a proximal portion;

a distal portion; and

a longitudinal axis between the proximal portion and the distal portion,

wherein the distal portion comprises:

at least one blade, the at least one blade having a retracted position in which the at least one blade is substantially parallel to the longitudinal axis and an expanded position in which the at least one blade is substantially non-parallel to the longitudinal axis, the at least one blade comprising a sharp surface facing distally and configured to at least partially ablate a valve during distal advancement of the device.

80. The device of Claim 79, wherein the at least one blade comprises a plurality of blades.

81. The device of Claim 80, wherein the plurality of blades comprises three blades.

82. The device of Claim 81, wherein the three blades are circumferentially spaced by about 120 degrees.

83. The device of Claim 79, wherein the proximal portion comprises a handle configured to operate the at least one blade between the retracted position and the expanded position.

84. The device of Claim 83, wherein the at least one blade comprises shape memory material and wherein the handle is configured to allow the at least one blade to self-expand from the retracted position to the expanded position.

85. The device of Claim 83, wherein the handle is configured to longitudinally compress and radially expand the at least one blade from the retracted position to the expanded position.

86. A kit comprising:

the device of any one of Claims 79-85; and

a vessel expansion device.

87. The kit of Claim 86, wherein the vessel expansion device comprises at least one of: a tourniquet, a balloon, and a LeMaitre device.

88. A kit for effecting retroperfusion in a vein, the kit comprising:

a valve disabling device; and

at least one of the group consisting of:

a launching catheter;

a target catheter; and

a prosthesis delivery system.

89. The kit of Claim 88, wherein the valve disabling device comprises at least one of: a reverse valvulotome, a balloon, and a stent.

90. The kit of Claim 88, wherein the kit comprises the launching catheter and the launching catheter comprises a needle configured to radially extend from the launching catheter.

91. The kit of Claim 90, wherein the launching catheter comprises an ultrasound emitting transducer.

92. The kit of Claim 88, wherein the kit comprises the launching catheter and the kit further comprising a guidewire, the launching catheter configured to be tracked over the guidewire.

93. The kit of Claim 88, further comprising an artery introducer sheath.

94. The kit of Claim 88, wherein the kit comprises the target catheter and the kit further comprising a second guidewire, the target catheter configured to be tracked over the second guidewire.

95. The kit of Claim 88, wherein the kit comprises the target catheter and the target catheter comprises an ultrasound receiving transducer.

96. The kit of Claim 88, wherein the kit comprises the target catheter and the target catheter comprises a balloon.

97. The kit of Claim 88, further comprising a third guidewire, wherein at least one of: the second guidewire is configured to snare the third guidewire and the third guidewire is configured to snare the second guidewire.

98. The kit of Claim 88, further comprising a vein introducer sheath.

99. The kit of Claim 88, further comprising a vein access needle.

100. The kit of Claim 88, further comprising an access guidewire.

101. The kit of Claim 88, further comprising at least one balloon.

102. The kit of Claim 101, wherein the at least one balloon is configured to pre-dilate a fistula.

103. The kit of Claim 101, wherein the at least one balloon is configured to expand a vessel diameter.

104. The kit of Claim 101, wherein the at least one balloon is configured to make a valve incompetent.

105. The kit of Claim 101, wherein the at least one balloon is configured to apply a pressure greater than about 1,013 kPa.

106. The kit of Claim 88, further comprising a prosthesis delivery system.

107. The kit of Claim 88, further comprising a device configured to stretch a vessel.

108. The kit of Claim 107, wherein the device configured to stretch the vessel comprises at least one of a tourniquet, a balloon, and a LeMaitre device.

109. The kit of any one of Claims 88-108, further comprising a computing device configured to be communicatively coupled to at least one of the launching catheter and the target catheter.

110. The kit of Claim 109, wherein the computing device comprises a display device configured to display information about relative positions of the launching catheter and the target catheter.

111. The kit of Claim 109, wherein the computing device comprises a speaker configured to emit information about relative positions of the launching catheter and the target catheter.

112. A kit for effecting retroperfusion in a vein, the kit comprising:

a launching catheter;

a target catheter; and

a prosthesis delivery system.

113. The kit of Claim 112, wherein the launching catheter comprises a needle configured to radially extend from the launching catheter.

114. The kit of Claim 112, wherein the launching catheter comprises an ultrasound emitting transducer.

115. The kit of any one of Claims 112-114, wherein the target catheter comprises an ultrasound receiving transducer.

116. The kit of Claim 115, wherein the ultrasound emitting transducer comprises an omnidirectional transducer.

117. A method of making valves of a vessel incompetent, the method comprising:

advancing a reverse valvulotome in a direction opposite native fluid flow in the vessel, wherein, during advancing the reverse valvulotome, at least one blade of the reverse valvulotome at least partially ablates the valves.

118. The method of Claim 117, wherein the reverse valvulotome comprises

a proximal portion;

a distal portion; and

a longitudinal axis between the proximal portion and the distal portion,

wherein the distal portion comprises:

at least one blade, the at least one blade having a retracted position in which the at least one blade is substantially parallel to the longitudinal axis and an expanded position in which the at least one blade is substantially non-parallel to the longitudinal

axis, the at least one blade comprising a sharp surface facing distally and configured to at least partially ablate a valve during distal advancement of the device.

119. The method of Claim 118, further comprising expanding the vessel and the valves in the vessel.

120. The method of Claim 119, wherein expanding the vessel and the valves in the vessel comprises applying a tourniquet to a body part comprising the vessel.

121. The method of Claim 119, wherein expanding the vessel and the valves in the vessel comprises expanding a balloon in the vessel.

122. The method of any one of Claims 119-121, wherein expanding the vessel and the valves in the vessel comprises expanding a LeMaitre device in the vessel.

123. A method of forming a fistula in a first vessel, the method comprising:

inserting a launching catheter into a second vessel, the launching catheter comprising:

an ultrasound emitting transducer, and

a needle configured to radially extend from the launching catheter;

inserting a target catheter into the first vessel, the target catheter comprising an ultrasound receiving transducer;

emitting an ultrasound signal from the ultrasound emitting transducer;

during emitting the ultrasound signal and until the ultrasound signal is received by the ultrasound receiving transducer, at least one of:

rotating the launching catheter, and

longitudinally moving the launching catheter; and

after the ultrasound signal is received by the ultrasound receiving transducer, extending the needle from the launching catheter, wherein extending the needle comprises:

exiting the second vessel,

traversing interstitial tissue between the second vessel and the first vessel, and

entering the first vessel.

124. The method of Claim 123, wherein the ultrasound emitting transducer comprises a directional transducer.

125. The method of Claim 124, wherein the needle is configured to radially extend from the launching catheter along a path aligned with a path of the directional transducer.

126. The method of any one of Claims 123-125, wherein the ultrasound receiving transducer comprises an omnidirectional transducer.

127. A method of accessing a target vein, the method comprising:

inserting a needle into the target vein; and

inserting a guidewire into the target vein through the needle.

128. The method of Claim 127, wherein the target vein is the proximal tibial vein.

129. The method of Claim 127, further comprising advancing a catheter over the second guidewire.

130. The method of Claim 127, wherein the guidewire comprises an ultrasound receiving transducer.

131. The method of Claim 127, further comprising advancing the guidewire in a direction of flow of blood in the target vein.

132. The method of any one of Claims 127-131, further comprising inserting an introducer sheath into a second vein upstream of the target vein.

133. The method of Claim 132, further comprising inserting a second guidewire into the second vein.

134. The method of Claim 133, wherein the second guidewire comprises an ultrasound receiving transducer.

135. The method of Claim 133, further comprising:

at least one of:

snaring the guidewire with the second guidewire or a snare and

snaring the second guidewire with the guidewire; and

pulling the second guidewire in a direction opposite of blood flow into the target vein.

136. The method of Claim 135, wherein snaring the guidewire comprises injecting contrast and visualizing using fluoroscopy.

137. The method of Claim 135, further comprising advancing a catheter over the second guidewire.

138. The method of Claim 137, wherein the catheter comprises an ultrasound receiving transducer.

139. A method of effecting retroperfusion in a vein, the method comprising:

providing a valve disabling device; and

providing at least one of the group consisting of:

a launching catheter;

a target catheter; and

a prosthesis delivery system.

140. A method of effecting retroperfusion in a vein, the method comprising:

providing a launching catheter;

providing a target catheter, wherein the launching catheter and the target catheter are configured to form a passageway between a first vessel and a second vessel; and

providing a prosthesis delivery system, wherein the prosthesis delivery system is configured to deploy a prosthesis in the passageway.

141. A method of effecting retroperfusion in a first vessel, the method comprising:

providing a first system configured to create a fistula between the first vessel and a second vessel; and

providing a second device configured to make valves in the first vessel incompetent.

142. A method of marking a fistula point, the method comprising:

applying a marker to skin proximate to a location of the fistula, the marker visible under fluoroscopy.

143. The method of Claim 142, wherein the marker comprises a clip.

144. The method of Claim 142, wherein the marker comprises radiopaque material.

145. The method of Claim 142, wherein the fistula is between a first vessel and a second vessel.

146. The method of any one of Claims 142-145, wherein applying the marker is before deploying a prosthesis in the fistula.