CLAIMS

1. A pump comprising:

a pump housing that is expandable and compressible; and

a rotor that is expandable and compressible and disposed in the pump housing, the rotor comprising at least one rotor blade, a hub, and an axis of rotation, wherein at least a portion of the at least one rotor blade extends from the hub along a first axis that is offset a predetermined distance from a radial axis of the rotor that traverses the axis of rotation.

2. The pump of claim 1, wherein the hub is cylindrically shaped and/ or wherein a first end of the hub is tapered with respect to a second end of the hub.

3. The pump of any of claim 1 or 2, wherein the rotor is formed via injection molding, vacuum molding, assure casting, and/or lost-molds and/ or wherein the rotor is formed from a single material.

4. The pump of any of claims 1-3, further comprising at least one second rotor blade that extends from the hub along a second axis that is offset a predetermined distance from the radial axis of the rotor, wherein the first axis and second axis are offset to opposite sides of the radial axis.

5. The pump of any of claims 1-4, wherein the at least one rotor blade is helically wound around the hub.

6. The pump of claim 5, wherein the at least one rotor blade includes a constant helical pitch or wherein the at least one rotor blade includes a varied pitch along a length of the hub.

7. The pump of any of claims 1-6, wherein the first axis is substantially parallel to the radial axis.

8. The pump of any of claims 1-7, wherein the at least one rotor blade includes a concave side and a convex side, preferably wherein, when the rotor is compressed to a compressed state, the concave side of the at least one rotor blade is laid against an exterior of the hub.

9. The pump of claim 8, wherein the first axis is offset from the radial axis in a direction of the convex side of the at least one rotor blade, preferably wherein the first axis includes a spiral wound around the hub, preferably wherein the spiral may include a constant pitch or a variable pitch, preferably wherein the spiral includes a quarter twist, a one-half twist, or multiple twists around the hub..

10. The pump of claim 9, wherein, at the at least a portion of the at least one rotor blade, the convex side extends substantially tangentially from the hub and/ or wherein, at the at least a portion of the at least one rotor blade, the concave side is offset from the radial axis in the direction of the convex side of the at least one rotor blade.

11. The pump of any of claims 1-10, further comprising a drive shaft including a proximal end and a distal end, wherein the hub of the rotor is mounted to the distal end of the drive shaft and the drive shaft is rotated to rotate the rotor, wherein the pump preferably further comprises a motor coupled to the proximal end of the drive shaft, wherein the motor is preferably configured to rotate the drive shaft

and/ or wherein the pump preferably further comprises a catheter including a distal end coupled to a proximal end of the pump housing, wherein the drive shaft is preferably disposed through a hollow interior of the catheter.

12. The pump of any of claims 1-11, wherein the pump is a blood pump and the pump housing includes an inlet and an outlet and rotation of the rotor conveys blood from the inlet to the outlet.

13. The pump of claim 11, wherein the pump housing is insertable into a heart of a patient, preferably wherein the pump housing is insertable into a left ventricle of the heart of a patient, preferably wherein an outlet of the pump is insertable into an aorta of the heart of the patient.

14. The pump of claim 1, wherein a convex side of the at least one rotor blade includes a suction side of the at least one rotor blade and a concave side of the at least one rotor blade is a pressure side of the at least one rotor blade.

15. A rotor for a pump, the rotor comprising:

at least one rotor blade, a hub, and an axis of rotation, wherein at least a portion of the at least one rotor blade extends from the hub along a first axis that is offset a predetermined distance from a radial axis of the rotor that traverses the axis of rotation,

wherein the at least one rotor blade is expandable and compressible relative to the hub,

preferably wherein a convex side of the at least one rotor blade includes a suction side of the at least one rotor blade and a concave side of the at least one rotor blade is a pressure side of the at least one rotor blade.