BIOLIFED Factsheet Footnote References:

Human Mini-Heart: Testing **Market: $5B+** (1)
Cardiac Patch: Heart Repair **Market: $3B+** (2)
Vascular Graft: Heart Bypass **Market: $3B+** (3)
Heart Valves: Valves Replacements **Market: $8B+** (4)
Full-Size Human Heart: Transplantation **Market: $15B+**(5)

Investment Highlights

- Addressing unmet needs in cardiovascular disease
  - Cardiovascular disease in the leading cause of death globally (6)
  - Due to lack of viable donor organs, only ~3500 heart transplants take place in the US and ~5000 globally each year (7)
  - Potential unmet need for heart transplants in the US~200,000 annually (8)
- Near-term commercialization of Mini-Heart
  - $7B+ market opportunity (9)
  - Could provide a better predictive model than animal testing used for clinical trials; substantially reducing reliance on animal testing in pharma R&D
  - Mini-Heart does not need regulatory approval and thus is short-term to market
- Developing fully functioning 3D bioprinted heart
  - Could make viable organ replacement an accessible and affordable reality
  - Development path includes multiple milestones that each represent multi-billion-dollar independent market opportunities (cardiac patches; vascular grafts; heart valves)
- World-class leadership and scientific team collaborating with world-class strategic partners
  - BIOLIFE4D is a resident company of Johnson & Johnson Innovation - JLABS, a premier life science incubator program
  - Team combines deep experience in life-sciences, biomedical engineering, tissue engineering, and transplantation

Value Proposition

BIOLIFE4D has a robust proposed product pipeline which includes cardiac patches, vascular grafts, heart valves, and a 3D bioprinted human heart. The Company expects to commercialize its first product, the Mini-Heart, in late 2023/ early 2024, targeting clinical research organizations and big pharma. The 3D bioprinted Mini-Heart is based on the geometry of a human heart and is being developed for potential use in cardiotoxicity testing in drug and vaccine development. Cardiotoxicity is frequently a major factor in failed human trials (10). The Mini-Heart potentially offers researchers a way to test drug candidates on a heart that is similar in form and function to a human heart, potentially providing a better predictive model than animal testing used for clinical trials, which could ultimately drive time and cost savings in the discovery phase for drug developers. No FDA approval is currently required to commercialize the Mini-Heart.

Ultimately, BIOLIFE4D is working toward the development of a patient-specific, fully functioning heart created through 3D bioprinting that uses a patient's own cells, which could potentially address the lack of supply of donor organs and could also improve some of the challenges associated with existing transplant methods, which include organ rejection and the need for extensive immunosuppressant therapy.

As BIOLIFE4D executes on its vision of perfecting the technology to make viable organ replacement an accessible and affordable reality, it is also working toward commercializing bioengineered cardiac components, such as cardiac valves and patches, that the Company believes will meaningfully impact patients with cardiovascular disease while BIOLIFE4D researchers continue development of a full-sized bioengineered human heart.

- (1) Research and Markets Global ADME-Toxicology Testing Market 2021-2027 - Growth Momentum Shifts Away from In Vivo Technologies; In Vitro Technologies to Lead the Charge, September 13, 2021
- (2) Grandview Research: Cardiovascular and Soft Tissue Repair Patches Market Size, Share & Trend Analysis Report By Application (Cardiac Repair, Vascular Repair, Pericardial Repair, Dural Repair, Soft Tissue Repair) 2022 – 2030; Report ID: 978-1-68038-677-6, Number of Pages: 125, Historical Range: 2016 – 2020: February 2022
- (3) Report Linker: Global Vascular Grafts Industry: reportlinker, p05896475: February 2022: 481 pages
- (4) Transparency Markets: Heart Valve Devices Market (Type: Mechanical Heart Valve, Biological Heart Valve, and Transcatheter Aortic Valve) - Global Industry Analysis, Size, Share, Growth, Trends, and Forecast, 2022-2031: Healthcare: TMRGL486: 243 Pages
- (5) Heart Transplant Market - Global Growth, Trends and Forecast (2022 - 2027) By Types, By Application, By Regions and By Key Players: SynCardia Systems, HeartWare International, Apaxis Medical: 14 March 2022, 134 Pages
- (6) Mortality in the United States, 2020, NCHS Data Brief No. 427, December 2021
- (7) Taylor DO, Edwards LB, Boucek MM, et al. Registry of the International Society for Heart and Lung Transplantation: twenty-fourth official adult heart transplant report--2007. J Heart Lung Transplant 2007; 26:769.
- (8) Matthew J Everly, Cardiac transplantation in the United States: an analysis of the UNOS registry**,** Clin Transpl. 2008;35-43. PMID: 19708444
- (9) Research and Markets Global ADME-Toxicology Testing Market 2021-2027 - Growth Momentum Shifts Away from In Vivo Technologies; In Vitro Technologies to Lead the Charge, September 13, 2021
- (10) Mortality in the United States, 2020, NCHS Data Brief No. 427, December 2021