BIOLIFE4D

BIOLIFE4D at a Glance

BIOLIFE4D is committed to perfecting the technology to make viable organ replacement a safe, accessible and affordable reality. With BIOLIFE4D, a patient-specific, fully functioning heart will be created through 3D bioprinting and the patient's own cells, eliminating the challenges of organ rejection and long donor waiting lists that plague existing organ transplant methods.

Near Term Milestones and Revenue Generation

BIOLIFE4D anticipates demonstrating the world's first functional "Mini-Heart" by late 2019 or early 2020, which the company expects to become the "Gold Standard" used in pharmaceutical screening and research. This could be an alternative to cardiac toxicity testing on animals, providing better predictive results for pharma and sparing the animals from experimentation. Because the Mini-Heart will not require FDA approval, it offers a short term path to potentially significant revenue for our investors.

Capitalizing on 3D Bioprinting Breakthroughs

3D bioprinting is the process of creating cell patterns in a confined space using 3D printing technologies, thereby preserving cell function and viability within the printed construct. Bioprinters are now capable of creating functional biological structures with the potential to one day restore, maintain, improve, and/or replace existing organ function.

Today, advancements in regenerative medicine, adult stem cell biology, additive manufacturing (3D printing) and computing technology have enabled bioprinting to produce human body parts including multilayered skin, bone, tracheal splints, cartilaginous structures like an ear – and even simple organs like a bladder.

BIOLIFE4D plans to replicate the same conditions in vitro (outside of the body) as occur naturally in vivo (within the body) but in an accelerated timeframe and in a manner that allows the cells to be specialized for our desired purpose.

The BIOLIFE4D process starts with a blood sample and an MRI to get a 3D image of a patient's heart. The MRI image will create a digital blueprint for the new heart and the blood cells will be converted to the specialized heart cells which will be utilized during the 3D bioprinting process. As a result, this bioengineered heart will be both a precise fit and a genetic match for the patient. The new heart is then placed in a bioreactor where it is matured and readied for transplant.

Advantages of BIOLIFE4D's Process

- Minimize the need for donor organs
- Eliminate transplant rejection by using a patient's own cells
- Eliminate currently required immunosuppressant therapy and its side effects
- Increase patient's longevity and quality of life
- Provide an option to the countless people who need an organ transplant but are not allowed to be on the waiting list due to age or other disqualifying factors
- Allow for patient-specific applications (implants, therapeutic treatments)
- Provide better predictive results to pharma during new drug and therapy development and testing
- Potentially reduce the amount animals needed for cardiac toxicity testing by pharma and drug discovery companies
- Many others

Strategic partnerships with world class research institutions.

Chicago
Northwestern University
University of Chicago
Northwestern Memorial Hospital
University of Illinois, Chicago
Argonne National Laboratories

Houston
Baylor
MD Anderson
Rice
UT Health
Houston Methodist

Preeminent world leaders coming together to collaborate as a team

BIOLIFE4D Management and Science Team

Steven Morris, CEO & Founder is a seasoned business leader who recently owned and sold a successful medical device company that specialized in precision medical implants and surgical instrumentation and equipment.

Dr. Jeffrey Morgan M.D., Chief Medical Officer for BIOLIFE4D is also Professor and Division Chief for Cardiothoracic Transplantation & Circulatory Support at Baylor College of Medicine.

Dr. Ravi Birla, Chief Science Officer is also Associate Director at the Department of Stem Cell Engineering at Texas Heart Institute.

Dr. Adam Feinberg, Scientific Advisory Team Leader is also Associate Professor of Materials Science & Engineering and Biomedical Engineering at Carnegie Mellon University.

Dr. Raimond Winslow, Director of the Institute for Computational Medicine is also Professor of Biomedical Engineering at Johns Hopkins University.

Dr. Shayn Peirce-Cottler, Professor of Biomedical Engineering at the University of Virginia and Principal Investor at the Peirce-Cottler Laboratory.

Dr. Sean Palecek, Professor of Chemical and Biological Engineering at the University of Wisconsin.

Dr. Ibrahim Ozbolat, Associate Professor of Engineering Science & Mechanics in the Biomedical Engineering Department at Penn State University.

Dr. Ramille Shah, Assistant Professor of Materials Science & Engineering in the McCormick School of Engineering at Northwestern University.

Dr. Janet Zoldan, Assistant Professor of Biomedical Engineering at the University of Texas at Austin & and Principal Investigator at the Zoldan Group.

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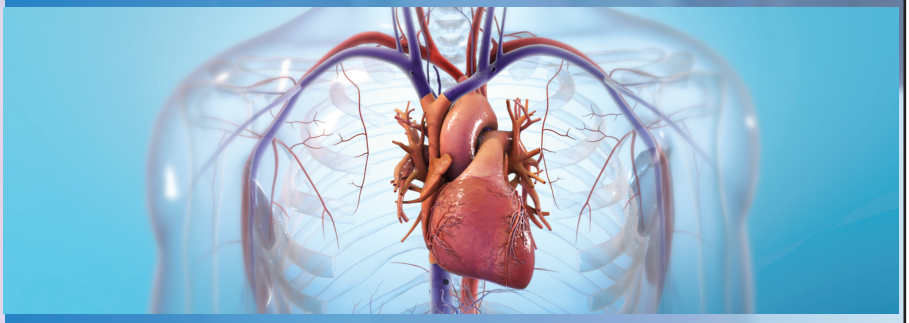
Market Opportunity

- 1 in 3 deaths globally attributable to cardiovascular disease.
- 1 in 3 mortality rate is increasing due to growing risk factors like diabetes, obesity, increasing life span/geriatric population.
- Estimated 7+ billion people alive now (estimated to be about 12 billion by 2100).
- Currently only 5,000 heart transplants take place globally each year primarily due to massive lack of supply of donor organs.
- Current cost of a heart transplant approx. $500,000 initially and $1.4M per patient over the patient's life.
- Multi-Billion dollar market potential for various unique milestones addressing lesser-stage heart failure on way to the global market for bioengineered hearts viable for transplantation.



BIOLIFE4D Strengths

The CEO and Founder is a seasoned medical device business leader who has assembled a team of world-class biomedical engineers and life sciences experts.

The Chief Medical Officer for BIOLIFE4D is the Surgical Director, Mechanical Circulatory Support and Cardiac Transplantation at the Texas Heart Institute, the world's pre-eminent Institute where the very first successful heart transplant took place in the US and where the very first artificial heart transplant was performed. A history of working on "firsts" with the FDA.

The Chief Science Officer for BIOLIFE4D is a highly regarded expert in tissue engineering and has concentrated on Cardiac biofabrication for nearly two decades.

Strategic Partnerships: BIOLIFE4D has forged strategic partnerships with the world's leading cardiac institutions.

Facilities: BIOLIFE4D's labs are located at the Texas Medical Center in Houston Texas, the epicenter of cardiac research in the US and the world's largest medical complex. Located in JLABS, and as a result of strategic partnerships, BIOLIFE4D has direct access to the most sophisticated, state-of-the-art imaging and scientific equipment available.

Scalability: BIOLIFE4D is able to scale according to available resources.

Milestones: Lack of Reliance on Any Individual Milestone. None of BIOLIFE4D's milestone opportunities are dependent upon reaching any of the other milestone opportunities. Each individual milestone is a potential billion dollar opportunity distinct of any others.

Robust Pipeline

Cardiac Patch: Bioprint a patient-specific vascularized and conducting 3D cardiac patch using human iPS cells that is equivalent in form and function. BIOLIFE4D announced in June, 2018 that it had successfully produced human tissue in the form of a cardiac patch. Estimated Market Value: $5B+ annual in US alone.

Mini-Heart: Bioprint human mini-hearts based on the geometry of mammalian hearts consisting of 4 chambers, vascular anatomy and the cardiac conduction system. Potential Market: Applications in cardiac toxicology and predictive models of pharmacological agents by big-Pharma, simultaneously reducing the need for animal experimentation. Estimated Market Value: $1B+ annual in US alone.

Small Diameter Vascular Graft: A tri-layer tubular graft with vascular endothelial cells, smooth muscle cells and fibroblasts, with functional properties matched to coronary arteries. Estimated Market Value: $2.5B+ annual in US alone.

Mitral and Aortic Heart Valves: A tri-layer 3D bioprinted valve consisting of the fibrosa, spongiosa and ventricularis populated with endothelial cells and interstitial cells derived from human iPS cells. Potential Market: Over 90,000 valve replacement surgeries are performed every year in the US alone (over 275,000 globally).

Full Heart: 3D Bioprint human hearts viable for transplant based on patient specific MRI scans and autologous iPS cells, including contractile cells, vascular cells and conducting cells. Estimated Market Value: $5B++ annual in US alone.

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