

The background of the cover is a dark blue color with a repeating pattern of stylized, overlapping leaf or petal shapes in a slightly darker shade of blue. The text is centered in the upper half of the page.

# **Leonhardt Ventures**

**2017 Annual Report**

Leonhardt Ventures  
**Annual Report**  
**Table of Contents**



I. Letter to Shareholders - 2016 Year in Review .....	5
II. Forward Looking Statement .....	13
III. Corporate History & Background.....	14
IV. Business Model .....	16
V. Overview of Business Units .....	16
VI. Facilities, Equipment & Assets .....	17
VII. Intellectual Property, Key Agreements, Grant Awards & Research Collaborations .....	18
VIII. Financial Progress.....	19
IX. Board of Directors & Corporate Governance .....	20
X. Advisory Board & Management Team.....	23
XI. 2017-2019 Goals .....	23
XII. Progress Report by Startup / Licensable Technology Platform.....	24
• Regenerative Medtech .....	25
• Regenerative Economy .....	33
• Our Mission.....	35
XIII. Key Figures 2016 .....	36
• Major Historical Milestones.....	38

# Leonhardt's Launchpads by Cal-X Stars Business Accelerator, Inc.

2017 Portfolio of Startups/Licensable Technology Platforms (LTP's)

## Regenerative Medtech - Organ Regeneration

### Heart & Cardiovascular

- BioLeonhardt – heart regeneration
- AortaCell – aorta regeneration
- BioPace – biological pacemaker regeneration
- Valvublator – heart valve regeneration
- VibroCell (includes CoroStim) – vibrational energy to prevent clots, plaque, calcification
- HeartScore – genomics and bioelectric based heart failure and stroke management
- VasculStim (formerly MyoStim Peripheral, includes EndoCell) – limb salvage regeneration, blood flow improvement for critical limb ischemia, diabetic leg and foot ulcer treatment, artery regeneration
- Second Heart Assist, Inc. – wireless powered chronic or temporary circulatory assist pump in aortic stent
- PressureStim – bioelectric treatment of high blood pressure via improved arterial elasticity and bioelectric membrane potentials management

### Brain

- CerebraCell (includes CerebraCell Brain-N-Hance and CerebraCell Concussion) – brain regeneration, cognitive function improvement, concussion recovery

### Cosmetic & Personal Care

- Stem Cell Bra – breast regeneration
- DentaCell – dental gum regeneration + tooth pulp storage
- OrthodontiCell – bioelectric stimulator for accelerated tooth movement and freezing teeth positions straight
- SkinCell Stimulator by MyoStim Skin – skin regeneration
- MyoStim ED – bioelectric erectile dysfunction treatment
- HairCell – hair regeneration

### Major Organ Regeneration

- EyeCell – eye regeneration
- PancreaCell – pancreas regeneration
- RegenaLung (includes ECMO-Cath) – lung regeneration (includes 50% owned subsidiary RegenaLung COPD) cannula for infusing oxygen directly into the blood using an oxygenator, a medical device that acts as an artificial lung
- LiverCell – liver regeneration

- KidneyCell – kidney regeneration
- EarCell – ear hearing regeneration
- BladderCell – bladder regeneration
- MucosaCell – sub-mucosa regeneration
- BioLeonhardt Whole Body Regeneration – whole body regeneration

### Cancer Treatment

- CancerCell – bioelectric cancer tumor treatment + regeneration

## Regenerative Economy

### Heart & Cardiovascular

- The California Stock Exchange™ (includes Cal-X Crowdfund Connect) – Alternative financing tools for social good impact and life science cos
- Kindheart Lionheart Media & Publishing – Social good impact and life science media
- Leonhardt Food & Beverage – Social good impact and life science research fund raising via beverage, food and related support services
- Leonhardt's Launchpads Accelerators & Incubators – Social good impact and life science innovation & startup incubators and accelerators in California and Utah.

## Headquarters

### Leonhardt's Launchpads by Cal-X Stars Business Accelerator, Inc.

2000 Main Street, Unit 333, Santa Monica, CA 90405  
[www.leonhardtventures.com](http://www.leonhardtventures.com) + <http://calxstars.com/what-we-do/>

#### Leonhardt Ventures (Leonhardt Vineyards LLC DBA Leonhardt Ventures)

2000 Main Street, Unit 333, Santa Monica, CA 90405  
[www.leonhardtventures.com](http://www.leonhardtventures.com) + [www.leonhardtvineyards.com](http://www.leonhardtvineyards.com)

#### Leonhardt's Launchpads NorCal

University of Northern California  
Science & Technology Innovation Center (UNC STIC)  
1129 Industrial Ave, # 207, Petaluma, CA 94952  
<http://www.uncm.edu/STIC.php>

#### Leonhardt's Launchpads Utah, Inc. @ C&S Business Incubator

370 S, 300 E, Salt Lake City, UT 84111  
**Research Lab @ BioInnovations Gateway**  
2500 S State St. #224, Salt Lake City, UT 84115  
<http://leonhardtventures.com/leonhardts-launchpads-utah/>

# 2017, An Exciting Year of Progress

## Letter to Shareholders

This year marked enormous progress in all our business groups. Across all groups we filed more than 100 new patents claims for organ regeneration. Our estate of IP for bioelectric stimulation controlled regenerative protein release includes SDF-1, IGF-1, EGF, HGF, PDGF, eNOS, VEGF, Activin A+B, RANKL/OPG/TNF A, Follistatin and Tropoelastin. Our **Heart and Cardiovascular Group** landed grant funding for heart regeneration studies via BioLeonhardt and the USTAR UTAG grant program at the University of Utah. VascuStim (formerly MyoStim Peripheral) completed 7 successful limb salvage patients in a row in the start of a clinical study in Mexico. BioPace filed an NIH grant application with hope to soon start biological pacing studies at U of Utah. Valvublator filed over 30 patent claims for minimally invasive heart valve decalcification and regeneration. AortaCell developed pre-clinical and clinical study protocols and is working to secure funding to complete these studies. Our **Cosmetic and Personal Care Group** launched clinical trials for HairCell hair regeneration in Mexico and Argentina. Stem Cell Bra completed a successful sheep study in Argentina. MyoStim ED teamed up with researchers at Harbor UCLA to move forward erectile dysfunction studies and filed for grant funding. Our SkinCell Stimulator by MyoStim Skin team is gearing up to launch skin regeneration studies in Los Angeles. OrthodontiCell filed over 20 new patent claims for accelerated tooth movement and stabilization and is preparing to launch studies at Tufts University. Our **Major Organ Regeneration Group** landed a major grant for EyeCell for eye regeneration studies at the University of Utah. PancreaCell presented at the Pancreas 2016 national meeting and initiated collaborative research with the Diabetes Research Institute in Miami with Dr. Camillo Ricordi and filed a USTAR grant application which is currently pending. RegenaLung held meetings with intent to launch lung regeneration studies at Cedars Sinai UCLA and Mayo Clinic Florida. LiverCell is working to begin research at Duke University. Our **Brain Group** presented CerebraCell at the North Bay Innovation Summit and the Neuro Tech Leaders Forum and filed more than 30 new patent claims including for a "brain saving helmet" we hope to be in all public places in the future for stroke victims. CerebraCell spun out CerebraCell Brain-N-Hance™ our first product for guiding cognitive function improvement. CerebraCell twice met with the UCLA Brain Institute with hope to file joint grant applications for continued research. CerebraCell signed aboard Dr. Santosh Kesari of the Pacific NeuroSciences Institute in Santa Monica, California a Providence St. Johns Hospital affiliate. Our **Cancer Group** filed over 12 new patents claims for dissolving cancer tumors with bioelectric stimulation and we teamed up with the brilliant scientist Eleanor Schuler in New Mexico and secured an option to her patents for reading the electrical communication signals within tumors and custom delivering the precise bioelectric signals to stop tumor growth. Our **Regenerative Economy Group** had a great year of progress as well especially with The Kindheart Lionheart Inspirational Works TV Network that surpassed 3 billion views across all content programs. We formally incorporated



**Leonhardt's Launchpads Utah, Inc.** to focus on accelerating organ regeneration startups working in close collaboration with the University of Utah. Via our grant supported entry into the USTAR BioInnovations Gateway laboratories we have access to over \$100 million worth of biomedical research equipment and a cGMP certified clean room for clinical production. We concluded a major patent license and research collaboration agreement with CalTech. We partnered with Biomerics Utah and Biomerics Advanced Catheter Minnesota for product engineering, development, quality control and manufacturing. This agreement gives us access to over 100,000 sq. feet of space and \$50 million plus value of equipment and engineering talent.

**Howard J. Leonhardt**  
Executive Chairman



## Dr. Leslie Miller

Chief Medical Officer

Leonhardt Ventures, Leonhardt's Launchpads and Second Heart Assist, Inc.



*"The convergence of bioelectric controlled release of regeneration promoting factors and repeat delivery of stem cell based mixed compositions for organ recovery has the potential to greatly improve patient outcomes. Our team is committed to carefully designed study protocols, always with patient safety first, to prove out the benefits of this platform technology."*

## Experience

- 30+ years heart failure, cardiovascular disease and regenerative medicine research with focus on organ regeneration and recovery.
- Director of Heart Failure and Stem Cell Research at Baycare Health System in Tampa, Florida.
- Chairman of the Department of Cardiovascular Medicine, Chief Heart Failure at University of Minnesota.
- Director of the University of South Florida (USF) Cardiovascular Clinical and Research Integrated Strategic program.
- Director of Cardiology at Washington Hospital Center, Georgetown University Hospital and Georgetown University School of Medicine.
- President of the International Society for Heart and Lung Transplantation and the American Society of Transplantation, as well as a Fellow of the American College of Cardiology and the American Heart Association.
- Investigator in over 80 clinical trials.
- Co-Editor Stem Cell and Gene Therapy For Cardiovascular Disease Textbook Publisher El Sevier



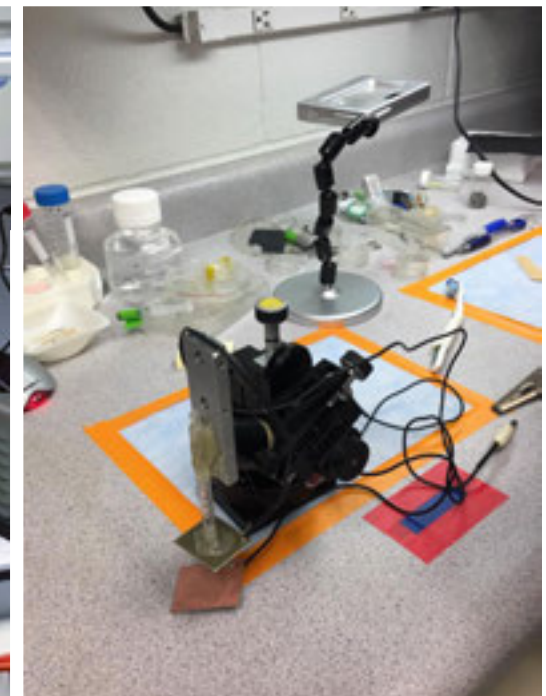
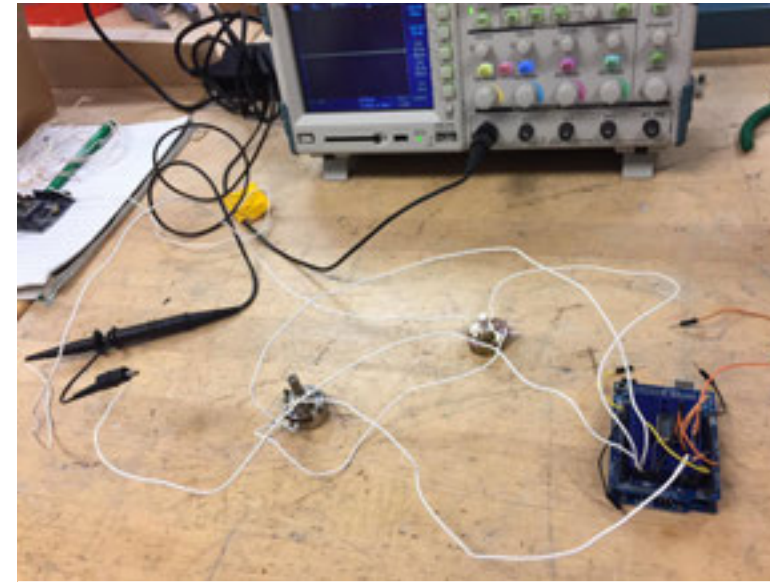
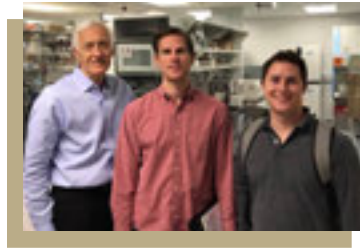


## Michael R. Angerbauer

Chief BioEngineer Leonhardt's Launchpads Utah, Inc.

Research Project Leader EyeCell, BioLeonhardt, MyoStim ED and OrthodontiCell

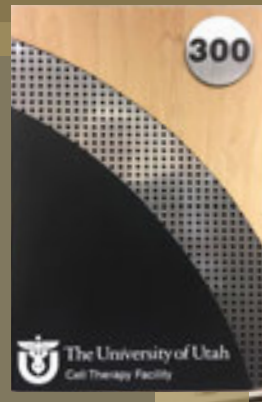
B.S. Biomedical Engineering, University of Utah and Second Heart Assist, Inc.



*"Conducting the experiments to prove out our bioelectric organ regeneration technologies has been a thrilling experience. We believe we are the verge of helping millions of patients in need with a better alternative."*

*"The resources we have available to us via the BioInnovations Gateway, our strategic partners such as Biomerics, the University of Utah and USTAR match any Fortune 500 Medtech company. We are delighted to have a strong research presence in Utah, my home state."*

*The Tom & Wilma Panos  
Cardiac  
Regeneration  
Research  
Laboratories*

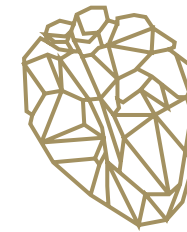


# Letter to Stakeholders

2016 was an amazing year of progress for Leonhardt's Launchpads.

## Major Highlights

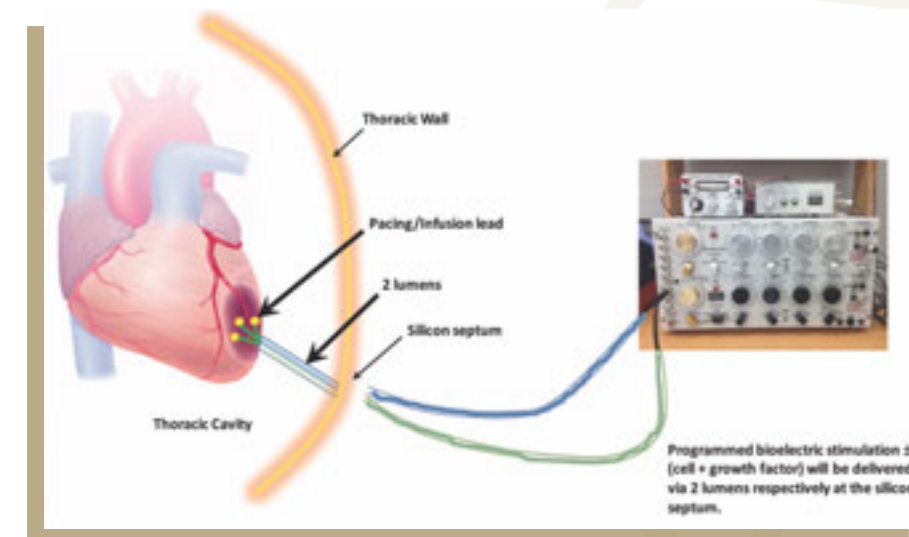
1. Filed organ regeneration full patent application
2. Discovered HIF 1 alpha signal for regeneration
3. Successfully completed 7 limb salvage patients - VascuStim (formerly MyoStim Peripheral)
4. Successfully completed sheep breast regeneration study - Stem Cell Bra
5. Won USTAR Technology Acceleration Grant for EyeCell eye regeneration - EyeCell
6. Successfully completed Milestone I EyeCell study with successful results - EyeCell
7. Working with University of Utah won USTAR UTAG grant for heart regeneration studies - BioLeonhardt
8. Developed "brain saving helmet" and filed patent application - CerebraCell
9. Won position in BioInnovations Gateway gaining access to lab space and over \$100 million of equipment and personnel
10. Signed engineering, quality control and manufacturing agreement with Biomerics. Gained access to 100,000 sq. feet of production and R&D space an top notch personnel
11. Built and tested Second Heart Assist, Inc. catheter prototypes
12. Built and testing Second Heart Assist, Inc. chronic implant prototype
13. Signed exclusive option patent license agreement with Neuro Code Tech Holdings for reading cancer tumors and customizing bioelectric treatment
14. Signed exclusive option patent license agreement with Caltech for Second Heart Assist, Inc.
15. Launched HairCell hair regeneration studies in Mexico and Argentina
16. Presented organ regeneration and recovery platform at over 15 major conferences
17. Secured \$700,000 in investment commitments of which over half is paid in
18. Filed NIH grant application for BioPace
19. Filed patent application for heart valve decalcification and regeneration - Valvublator
20. Developed accelerated tooth movement and teeth position freezing technology and filed patent application - OrthodontiCell

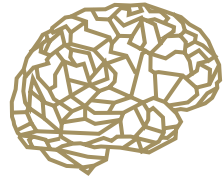


# Heart & Cardiovascular

Our Heart and Cardiovascular Group filed more than 100 new patent claims. BioLeonhardt's collaborating research partner, the University of Utah, was awarded a \$150,000 heart regeneration research grant by USTAR. BioLeonhardt presented at over dozen major meetings in 2016 and is set to present in early 2017 at UCARS Cardiac Recovery, CRT D.C. and 32nd Annual Snowmass Interventional Cardiology. AortaCell developed a wireless energy belt for shrinking aneurysms without surgery and presented at the VEITH/AIM Symposia in New York in November. BioPace linked up with U of Utah researchers and is applying to join the Technology Venture Commercialization Accelerator and also built bridges to University of Minnesota researchers. Valvublator filed over 30 new patent claims and developed a full animation video showing is breakthrough technology. The Utah bioengineering team working with Biomeric Advanced Catheter is building Valvublator test prototypes right now. Valvublator was accepted for presentation at CRT D.C. CoroStim filed 10 new patent claims specific to preventing blood clot formation on circulatory assist pump devices and launched CoroStim VibroCell. HeartScore launched a comprehensive stroke management system and teamed up with CerebraCell to design, patent and introduce a brain saving helmet which we hope in the future will be in all public places ready for one button ease of application for preventing brain damage in stroke patients. EndoCell teamed up with Mercator Medical and U.S. Stem Cell Inc. to introduce endothelial progenitor cell delivery for artery regeneration. EndoCell joined with VascuStim (formerly MyoStim Peripheral) as a component of their progressive aggressive limb salvage protocol. VascuStim (formerly MyoStim Peripheral) designed a full progressive aggressive limb salvage protocol and plans to launch clinical trials in early 2017. Second Heart Assist, Inc. launched with an all-star team to develop best in class devices for circulatory assist support including a patented wireless powered pump within an aortic stent. This team convened potential investigator meetings at the American College of Cardiology in Chicago and the Heart Failure Society of America Annual Meeting in Orlando each attended by more than 20 heart failure department chairs from leading institutions in the USA. Second Heart Assist, Inc. working with Biomerics Advanced Catheter has built and tested catheter prototypes and working with CalTech has built and tested wireless powered chronic implant prototypes. The team licensed 4 issued patents from CalTech and has numerous additional patents pending. Second Heart Assist, Inc. is on target to be in animal studies in June/July 2017 and in first-in-man studies by the end of the year. We filed a Second Heart grant application with USTAR which is currently pending. Leonhardt-Wetling Peripheral held business development meetings in The Netherlands and planned out the launch of wireless microcurrent treatment for diabetic foot ulcers in the North American Market. This is on

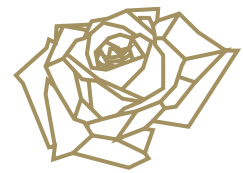
the heels of a very successful clinical trial in 47 patients already completed in Germany and Switzerland working with our manufacturing partner in Denmark. We are however sad to share the passing of John Wetling of Denmark the original inventor of this device. He will be missed. We also mourn the February 2017 loss of one of most valued long standing advisors CardioThoracic Surgeon Dr. Edward Diethrich former Chairman of the Arizona Heart Institute and Founder of the International Endovascular Society Annual Meeting.





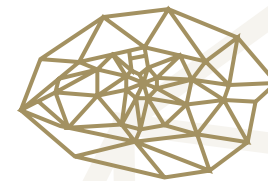
## Brain

Our Brain Group filed over 40 new provisional patent claims in 2016. CerebraCell developed and tested a full brain helmet for non-invasive treatments and an invasive design as well with implantable pacing leads. CerebraCell filed a number of grant applications and developed research protocols for (1) stroke recovery, (2) traumatic brain injury recovery, (3) concussion recovery and (4) brain function enhancement. On August 5th CerebraCell announced the filing of patents for a "brain saving helmet" and an alliance with HeartScore for a comprehensive stroke management program designed to reduce brain damage in millions suffering of strokes. The hope is that in the future the CerebraCell Brain Saving Helmet™ will be emergency uses boxes in all public places just like defibrillators are today. CerebraCell in November introduced its Brain-N-Hance™ product for brain enhancement in non-invasive and invasive configurations. CerebraCell presented at the Neuro Tech Leaders forum in San Francisco in October. In 2016 CerebraCell held meetings to discuss collaborative research with leading brain researchers at UCLA, Buck Institute and Kernel. We met in New York with executives associated with the NFL concussion recovery program to discuss collaborative research as well. CerebraCell signed up Dr. Santosh Kesari a leading Neuro Surgeon from Los Angeles and San Diego as Chief Medical Officer. Recently we met twice with the UCLA Brain Institute most recently with Dr. S. Michael Carmichael with the intention to file for grant funding together for joint research.



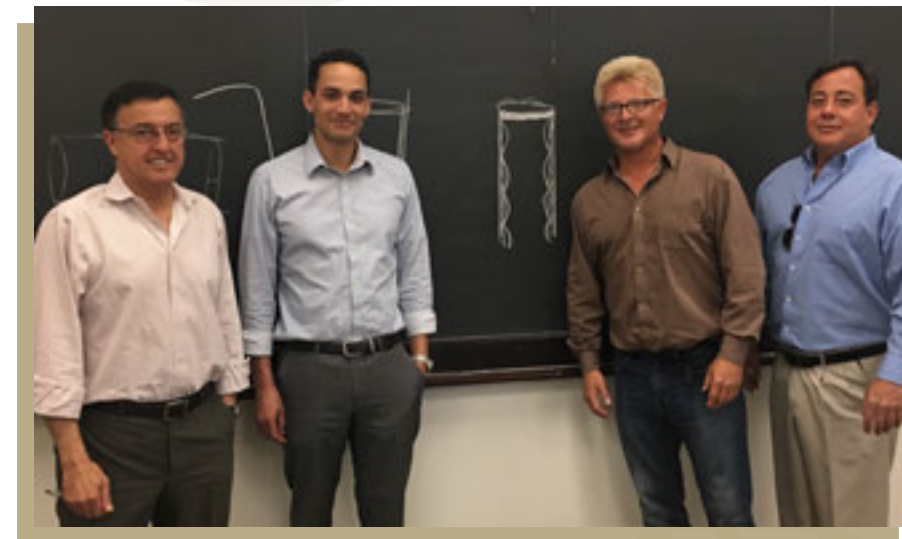
## Cosmetic & Personal Care

Our Cosmetic and Personal Care Group made enormous advancements in 2016. Stem Cell Bra compiled positive data from a sheep study in Argentina where all treated animals increased breast tissue volume by 20% with just 1 hour of stimulation with just 3 of our patented bioelectric protein expression control signals every other day for 4 weeks. DentaCell concluded an agreement with U.S. Stem Cell, Inc. in Sunrise, Florida for FDA GLP blood bank certified services for tooth pulp storage. OrthodontiCell developed an accelerated tooth movement device and filed over 15 new patents claims. OrthodontiCell linked up with Tufts University to advance this research forward. MyoStim Skin introduced SkinCell Stimulator™ and linked up with a team in Los Angeles to move forward translational research. HairCell signed aboard Derek Kahn as President and moved into clinical trials in Mexico and is preparing to launch additional clinical investigational sites in Argentina, China and Greece. We filed a MyoStim ED application with USTAR which is currently pending.

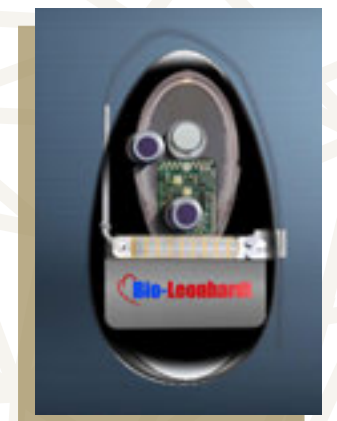


## Major Organ Regeneration

EyeCell won a \$125,000 research grant from USTAR for eye regeneration studies and presented supporting data for its expressed and infused proteins at a number of major meetings. EyeCell held meetings with the Dr. Mory Gharib lab at CalTech regarding research collaboration. We successfully completed Milestone I of this study. Tuan Hoang Ph.D. of USC was signed aboard to EyeCell as an engineering advisor. PancreaCell teamed up with Dr. Camillo Ricordi the Director of the Diabetes Research Institute in Miami and is preparing a number of grant applications to move forward research. We filed a PancreaCell grant application with USTAR which is currently pending. RegenaLung signed aboard Richard Koffler as President and met with teams of lung regeneration researchers at Cedars Sinai UCLA. The group is working on filing grant applications. LiverCell signed aboard Ben Boyter as President who has launched collaborative research discussions with a number of investigators in North Carolina at leading institutions. Our Major Organ Regeneration Group unveiled the launch of KidneyCell for kidney regeneration and EarCell for hearing regeneration in 2016. Laurelle Johnson was recruited to be President of BladderCell focused on bladder regeneration. We have teamed with Dr. Stuart Williams at the University of Louisville to launch a product for Gastric Mucosa regeneration - MucosaCell. The grandest project of our Major Organ Regeneration Group was the unveiling of our BioLeonhardt Whole Body Regeneration product with a full series of provisional and actual patent



filings and an explanatory animation video. We are planning to file June 14th 2017 a grant application for BioLeonhardt Whole Body with the National Science Foundation after a telephone conference with the section director for regenerative medicine.

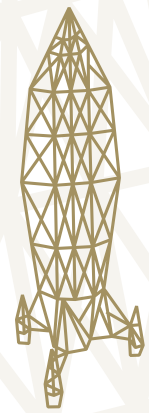


## Cancer

Our Cancer Treatment Group made major advances in 2016 filing patents for bioelectric signaling for stopping cell division and stopping blood supply to tumors. We signed up Dr. Santosh Kesari as our Chief Medical Officer who currently heads up the Neuro Cancer program at the John Wayne Cancer Institute at Providence St. Johns Hospital in Santa Monica, California. We also signed an exclusive option agreement with inventor Eleanor Schuler whom has a series of patents for reading the neuro code of cancer tumors and then custom designed a bioelectric signal array to treat that specific cancer tumor. Our internal team is filing IP on changing the protein expression on the surface of a tumor so that the body attacks it.



# Regenerative Economy



## The California Stock Exchange™

The California Stock Exchange™ ([www.calstockexchange.com](http://www.calstockexchange.com)) launched the Cal-X 30 Social Good Impact fund powered by Motif Investing with over 30 curated social good impact stocks as a BETA test for the future California Stock Exchange™. Cal-X developed a scoring system based on how well the rated companies treated their employees, suppliers, community and environment (sustainability). The scoring system put high emphasis on building an innovation culture and the social good impact of the company's products and organization. Visionary leadership was also high on the scale of the scoring system. Cal-X Crowdfund Connect published Leonhardt's Top 20 Tips for Crowdfunding Success and presented at over a dozen major meetings. Cal-X created a promotional alliance with iDISCLOSE for streamlined easy online form based crowdfunding related regulatory filings. CalXports (<http://cal-xport.com>) developed a great website resource for California based exporters. Cal-X Micro Loans teamed with ZimpleMoney and other resource providers to develop a crowd sourced micro lending platform.



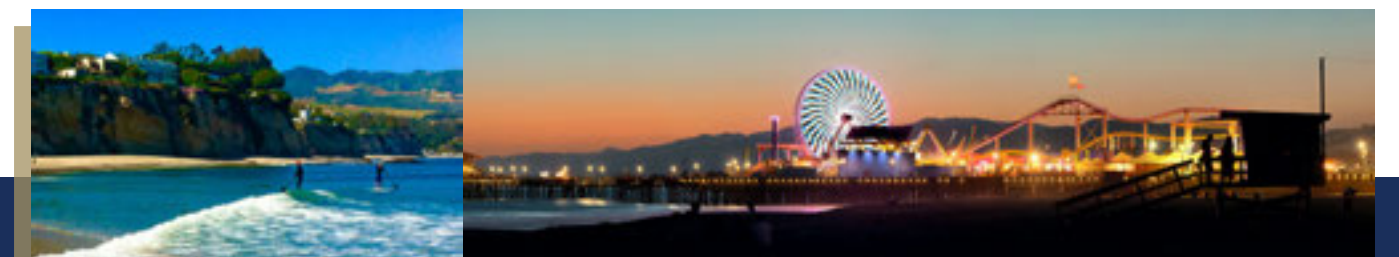
## Kindheart Lionheart Media & Publishing

Our Kindheart Lionheart TV Network ([www.kindheartlionhearttv.com](http://www.kindheartlionhearttv.com)) surpassed 3 BILLION viewers across all programs led by our Inspiring Leaders, Travel, Music, New Politics, Healthy Cooking, Fashion & Beauty and Spirituality Channels. We developed a number of original online TV programs including; Love Roller Coaster (2 episodes filmed), California Love (3 scripts written), Lions Dens + Crowdfund! The American Dream (sold to CNBC), The Kindheart Lionheart TV and Radio Program interviewing and highlighting people exhibiting compassion and courage in their life work (we shot 8 episodes and moved the format now from internet radio to Facebook Live video), Love Dialogues created by Tony Cronin, Great Speeches Covers and Dolphin Smiles: The Legend of Kindheart Lionheart. Kindheart Lionheart Media & Publishing is getting ready to publish Dolphin Smiles: The Legend of Kindheart Lionheart as both a fiction novel and a screenplay meant to be turned into a feature film. A number of writing school teachers at UCLA helped in improving the screenplay for submission. The team completed a full story board for presentation with professional drawings completed by a former Walt Disney animator. The team hopes to get a contract to turn this screenplay into a major motion picture in 2018. The Kindheart Lionheart Book Club for inspiring works is getting ready for a major marketing campaign to build sales in 2017. Wine Country Baseball held a successful 7th Annual Wine Country Baseball Classic in Napa Valley this year in October with the best amateur baseball players of Sonoma County pitted against the best of Napa County. This event once again raised funds for local charities and parks. This year's proceeds going to the Veterans Home in Yountville and Napa Valley Youth Baseball Club. Kindheart Lionheart Startup Media Support Services LTP (<http://kindheartlionheart.com/startup-media-support-services>) working in collaboration with Fizzpopmedia, TubeStart and Gas Money Productions launched to provide media related services to startups working through a network of curated vendors.



### This includes:

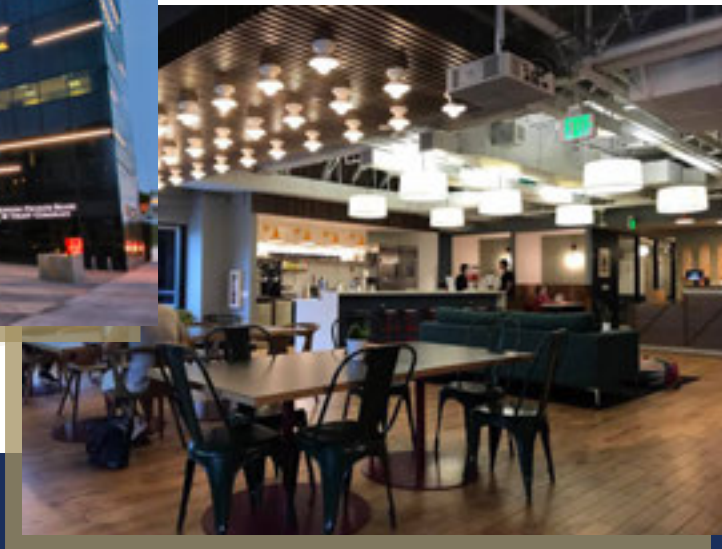
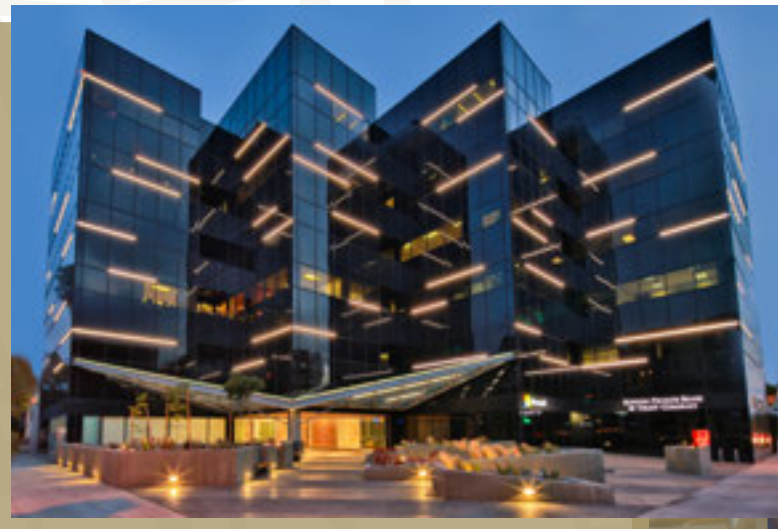
- Company video and animation production
- PR campaign building including PR Hacking
- Social media campaign
- Website development
- YouTube channel development
- Get in Pitch TV Shows and Events
- Improve your pitch video and pitch slide deck
- Develop your newsletter
- Trade show planning and management
- Building your story
- Marketing and advertising campaign development
- Brand development
- Content marketing
- Blog development
- Educational seminars development
- Annual report creation



## Leonhard's Launchpads Incubators & Accelerators

Startup California completed its 4th year of helping startups in California grow. LABioHub launched as a web based resource to help Los Angeles area biomedical startups as a sub-unit of Startup California.

Leonhardt's Launchpads operated by Cal-X Stars Business Accelerator, Inc. is incubating 26 regenerative medtech and 4 regenerative economy startups with strong research relationships with UCLA, USC and Pepperdine Universities. Leonhardt's Launchpads NorCal in association with the University of Northern California Science & Technology Innovation Center is incubating EyeCell and CerebraCell and may soon also be aiding HairCell. We presented CerebraCell at the NorthBay Innovation Summit in September. In 2016, we fully launched Leonhardt's Launchpads Utah, Inc. which is incubating 7 organ regeneration focused startups at this time working very closely with researchers at the University of Utah and the team at the innovation studio Useable. We opened up and staffed a bioengineering research lab at BioInnovations Gateway in Utah. In October of 2016, we launched Leonhardt's Launchpads Pasadena @ WeWork to better collaborate in research with CalTech.



## Leonhardt Food & Beverage

Lucille's American Cafes ([www.lucillescafe.com](http://www.lucillescafe.com)) finished another profitable year with sales once again surpassing \$2 million. Leonhardt Vineyards LLC DBA Leonhardt Ventures holds 50% rights to all franchising, recipes, trademarks and SOPS owned by Lucille's American Cafes and has transferred 9% of its 50% position to Cal-X Stars Business Accelerator, Inc. to incentivize our advisory team members to help us sell franchises. Food Trikes & Scooters ([www.foodtrikesandscooters.com](http://www.foodtrikesandscooters.com)) is getting set for sales push in 2017/18 with a newly designed mini electric powered food truck coupled with crowd financing and micro loan tools. Lionheart Cider had a spectacular growth year in Minnesota. Leonhardt Vineyards LLC DBA Leonhardt Ventures has an exclusive conditional option to distribute Lionheart Ciders in all the Western States and is gearing up to launch sales in 2017/18 and has arranged for Cal-X Stars Business Accelerator, Inc to have an option to buy 9% of their rights. Leonhardt BrewWorks held discussions with a number of breweries about brewing on an OEM contract basis for us a high end oak aged sour mash beer for us. We reached out to get an import license from Lionheart Lager in South Africa which is not yet concluded. We arranged limited distribution rights to Lionheart Wine of California. California Wine Financing is looking for opportunities to grow as a finance tool using crowdfunding and other resources for small family wineries in California including Leonhardt Vineyards LLC. Leonhardt Vineyards LLC ([www.leonhardtvineyards.com](http://www.leonhardtvineyards.com)) (note this is not part of our innovation accelerator it is 100% owned by Leonhardt Vineyards LLC) enters our 17th year in business in 2017. We purchased our first 15 acre vineyard plot in Dry Creek Valley in Sonoma County in 2000. We are producing our finest wines ever now. Our 2012 Sonoma County Pine Mountain Cabernet Sauvignon now in inventory ready to sell is the best wine we have ever made selling for \$588 a case. Leonhardt Food & Beverage is working on a business plan to open up a tasting room/restaurant for our wines, beers and ciders in a select California location. We are looking at Santa Monica, San Diego, Santa Barbara, San Francisco, Mill Valley, Berkeley and the area around Stanford University as possible locations. 50% of all profits from Leonhardt Food & Beverage sales are re-directed to organ regeneration and recovery research at Leonhardt's Launchpads regenerative medtech startups.





## Dr. Santosh Kesari

Chief Medical Advisor

CancerCell & CerebraCell

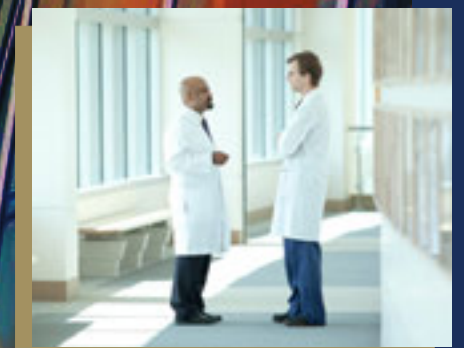
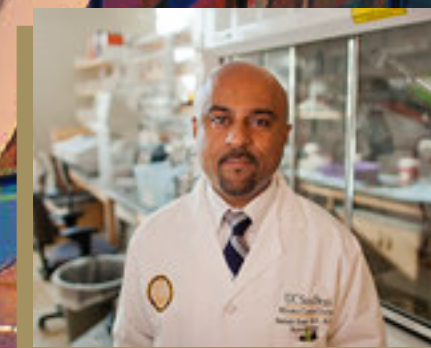
*"Our patented and patent pending technologies for reading the electrical communication signals of cancer tumors and delivering customized bioelectric signals to jam their ability to grow coupled*

*with specific bioelectric signals to halt cell division and starve a tumor of blood supply is unique in the field. We are combining this with bioelectric signals that change the surface protein expression of tumors so the body attacks it to develop a combination multi-mode therapy that what we hope will be the most effective treatment for cancer tumors. It is believed that bioelectric treatments can be less toxic than traditional chemo and radiation therapy treatments with less side effects. We are also the only firm that follows cancer tumor destruction treatment with a full organ regeneration and recovery protocol. Our team is excited to advance this therapeutic regime carefully through well designed pre-clinical and clinical protocols with hope to ultimately prove out safety and efficacy. There are many patients waiting for a solution like this to come forward."*

*"We are also making strides in harnessing the capability of non-invasive bioelectric scanning for the early detection of cancers and look forward to reporting to you soon progress in this direction."*

## Experience

- 30+ years heart failure, cardiovascular disease and regenerative medicine research with focus on organ regeneration and recovery.
- Director of Heart Failure and Stem Cell Research at Baycare Health System in Tampa, Florida.
- Chairman of the Department of Cardiovascular Medicine, Chief Heart Failure at University of Minnesota.
- Director of the University of South Florida (USF) Cardiovascular Clinical and Research Integrated Strategic program.
- Director of Cardiology at Washington Hospital Center, Georgetown University Hospital and Georgetown University School of Medicine.
- President of the International Society for Heart and Lung Transplantation and the American Society of Transplantation, as well as a Fellow of the American College of Cardiology and the American Heart Association.
- Investigator in over 80 clinical trials.
- Co-Editor Stem Cell and Gene Therapy For Cardiovascular Disease Textbook Publisher El Sevier

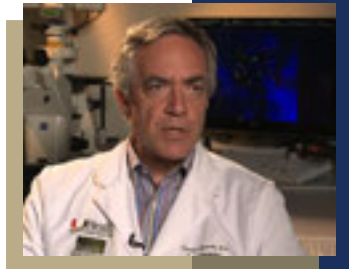




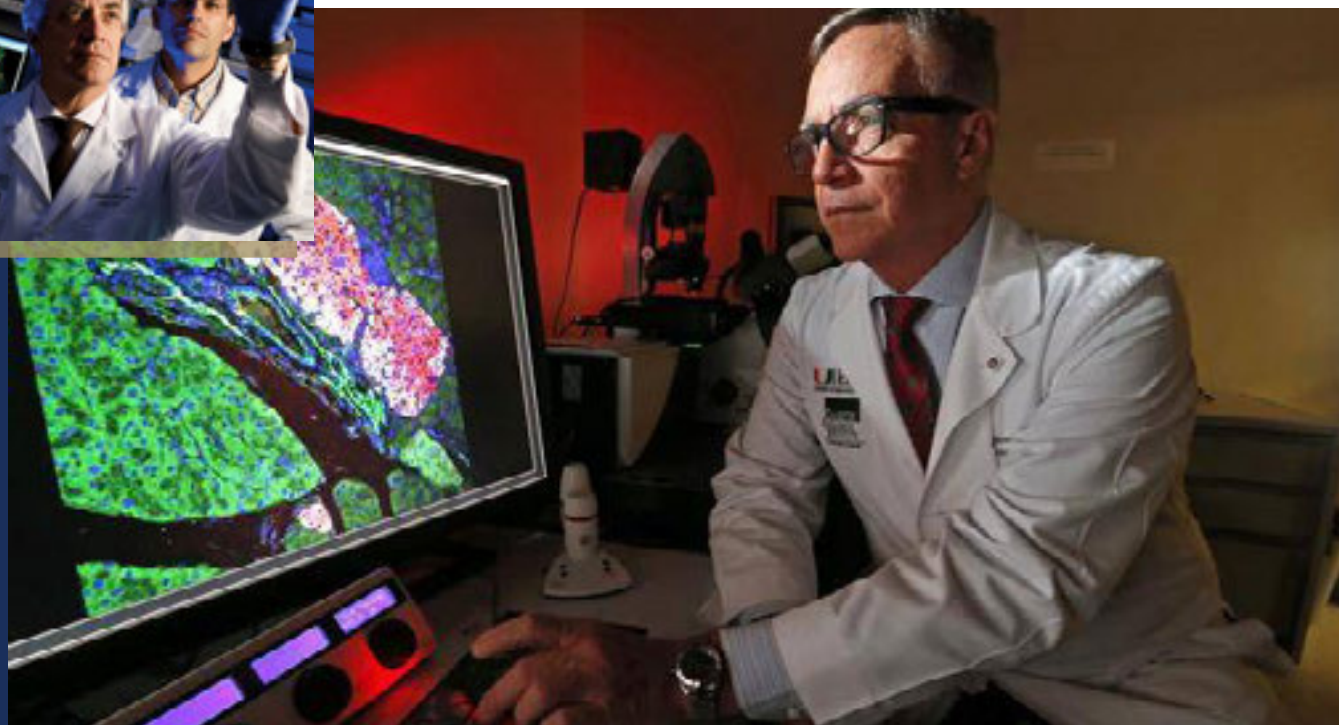
## Dr. Camillo Ricordi

Chief Medical Advisor - PancreaCell

Director Diabetes Research Institute Miami



*"A combination of bioelectric stimulation and repeat delivery of mixed stem + growth factor cell based compositions warrants further study for pancreas regeneration and diabetes treatment. Our team is excited to engage research collaborations to examine this carefully."*



## Experience

- Stacy Joy Goodman Professor of Surgery, Distinguished Professor of Medicine, Professor of Biomedical Engineering, and Microbiology and Immunology at the University of Miami (UM), Florida.
- Director of the Diabetes Research Institute (DRI: [diabetesresearch.org](http://diabetesresearch.org)) and the Cell Transplant Program.
- Responsible Head of the Human Cell Processing Facility (1993-2014).
- Co-Director of the Executive Office of Research Leadership (2001-2003)
- Senior Associate Dean for Research (2003-2006).
- Chaired the Dean's Research Cabinet (2006-2012) at the UM Miller School of Medicine.
- Washington University in St. Louis, Missouri, where he received an NIH Research Trainee Award (1986-1988) working with islet cell transplant pioneer Prof. Paul E. Lacy.
- Dr. Ricordi subsequently spent four years (1989-1993) with transplant pioneer, Prof. Thomas E. Starzl, as Director of Cellular Transplantation at the University of Pittsburgh Transplantation Institute. Since 1993, he has been working at the University of Miami (UM).
- President of the Cell Transplant Society (1992-94).
- Co-founder and chairman of the National Diabetes Research Coalition (Chairman 1997)
- Co-founder and president (1999-2001) of the International Association for Pancreas and Islet Transplantation.
- Dr. Ricordi is currently serving on the editorial boards of CellR4 (Editor-in-Chief; [www.cellr4.org](http://www.cellr4.org)) and Cell Transplantation (Co-Editor-in-Chief). He has served also on the boards of the American Journal of Transplantation (Associate Editor), Transplantation, Transplantation Proceedings, Tissue Engineering, and Graft (Editor-in-Chief, 1998-2002).
- Chairman of the Diabetes Research Institute Federation ([diabetesresearch.org/research-collaboration](http://diabetesresearch.org/research-collaboration))
- Dr. Ricordi has authored over 700 scientific publications.
- Inventor, he has been awarded 23 patents.



# Forward Looking Statement

**T**his annual report contains forward-looking statements, including statements regarding development of Leonhardt's Launchpads and Leonhardt Ventures existing and new products, the Company's progress toward commercial growth, and future opportunities and expected regulatory approvals. The Company's actual results may differ materially from those anticipated in these forward-looking statements based upon a number of factors, including uncertainties associated with development, testing and related regulatory approvals, including the potential for future losses, complex manufacturing, high quality requirements, dependence on limited sources of supply, competition, technological change, government regulation, litigation matters, future capital needs and uncertainty of additional financing, and other risks and challenges detailed in the Company's filings. Readers are cautioned not to place undue reliance on any forward-looking statements, which speak only as of the date of this release. Leonhardt's Launchpads operates with a very small staff and limited budget while launching more than 30 startups. Not all websites and information is able to be kept up to date all the time. If you have any specific questions about accuracy or up to date information please email us with your questions. Leonhardt's Launchpads technologies (licensable technology platforms - startups) are very early stage and un-proven and thus are deemed very high risk investments not suitable to most. Investing in Cal-X Stars Business Accelerator, Inc. DBA Leonhardt's Launchpads is limited to verified accredited and sophisticated investors only at this time. The Company undertakes no obligation to publicly release the results of any revisions to these forward-looking statements that may be made to reflect events or circumstances that occur after the date of this release or to reflect the occurrence of unanticipated events.

# Corporate History & Background

Leonhardt Ventures was formed in 1982 as HJ Leonhardt & Co. a sole proprietorship of Howard J. Leonhardt in Minneapolis, Minnesota. In 2005 this was formed into a California LLC via Leonhardt Vineyards LLC DBA Leonhardt Ventures. From 1982 to 1988 the primary business of the organization was to help promote exports of U.S. made cardiovascular and other medical products. In 1983 and part of 1984 Howard Leonhardt worked with American General Medical Corporation and in 1984 to Feb. 1986 with International Marketing Advisors, Inc. (IMA Medical) exporting cardiovascular and ICU devices primarily to the Eastern Hemisphere countries. In February of 1986 Leonhardt formed World Medical Corporation to focus on exporting cardiovascular and ICU products including those under a private World Medical label. That same year collaborations were initiated with Nova Medical Specialties, Numed, Dr. Robert O. Becker Author of The Body Electric, DMG and Labcor the the co-development and marketing of cardiovascular balloon catheters, oxygenators and heart valves. In 1988 Leonhardt formed World Medical Manufacturing Corporation to begin the design, development and manufacture of cardiovascular devices. Leonhardt patented the a predictably compliant polyurethane balloon cardiovascular catheter as a first product. In 1989 they secured their first outside milestone based investment commitment of \$300,000 from Nippon Zeon Co. of Japan. In 1989 regulatory clearance was received in Japan for the product line and in April 1990 U.S. FDA marketing clearance was received. Leonhardt then patented a radiation delivery catheter, an intravascular lung with vibrational energy to stop blood clots and improve gas exchange, the first percutaneous heart valve, the first percutaneous conformance stent graft for aortic aneurysm repair, one of the first stem cell delivery catheters and one of the first biological pacemakers. In 1995 the team working with Dr. Ken Thomson and Dr. Peter Field completed the first-in-man ever successful percutaneous repair of an aortic aneurysm. In June of 1997 World Medical Mfg. Corp. received a first offer to merge from Arterial Vascular Engineering, Corp. of Santa Rosa, California which later was formalized April of 1998 and closed December of that same year. November of that same year Medtronic announced their acquisition of Arterial Vascular Engineering, Inc. for \$3.7 billion in stock and \$600 million in cash for debt retirement. Howard Leonhardt remained President of World Medical Mfg. Corp. as a subsidiary of Medtronic AVE and took on an additional role as Executive Vice President of Emerging New Therapies. In 1999 the team published in The New England Journal of Medicine the first ever paper on endovascular repair of aortic dissections with Dr. Christof Nienaber. That same year they published in CIRCULATION the Journal of the American Heart Association with Dr. Shinichi Kanno the first ever paper on bioelectric stimulation controlled organ regeneration. June of 1999 Leonhardt left Medtronic to form Bioheart, Inc. the first company focused on living cell based regeneration of hearts. In 2000 Howard Leonhardt began filing a series of patents for bioelectric stimulation supported organ regeneration, mixed compositions and delivery systems. The company completed the historic first-in-man ever percutaneous stem cell based repair of a human heart in 2001 working with Dr. Patrick Serruys and Dr. Warren Sherman in The Netherlands. Leonhardt resigned as CEO in March of 2007 and took the role of Executive Chairman and CTO. Bioheart, Inc. completed a \$76 million valuation IPO on NASDAQ February of 2008. This was the only biotech IPO in the entire USA in this difficult financial crisis year. Shortly after the IPO Leonhardt moved to California and began his focused research on organ regeneration based on bioelectric stimulation, a re-fillable micro infusion pump and a mixed stem cell based composition. In 2008 Leonhardt's Launchpads NorCal was formed at the University of Northern California (Leonhardt has served on their formal Board of Directors since 1999) near Santa Rosa, California. In 2013 Cal-X Stars Business Accelerator, Inc. DBA Leonhardt's Launchpads was formed in Santa Monica, California. In November 2015 Leonhardt's Launchpads Utah was formed and later incorporated in Utah in 2016. These innovation/startup accelerators focus on accelerating the Leonhardt platform technology patents and concepts into viable businesses in position to land a key strategic partnership.

# Business Model

**O**ur innovation accelerator business model is to focus on incubating/accelerating a total of 30 regenerative medtech and regenerative economy startups for a maximum of 5 years. Our overwhelming primary focus is on organ regeneration with our proprietary platform technology of bioelectric stimulation based protein expression supported by a micro infusion pump and a multi-component stem cell based organ regeneration composition. 26 of our 30 startups in our 2017 innovation accelerator class fall in the organ regeneration and recovery focus. 4 of our 30 startups are classified as Regenerative Economy which including our startup and innovation incubators and accelerators as businesses themselves. Our business model is to advance organ specific regeneration focused regenerative medtech startups through first-in-man studies and then begin to seek a strategic partner/buyer with preferentially a 3% royalty on net sales forward. Our startup value building strategy is a focus on acquiring patents, building and testing prototypes, acquiring supporting data, building strategic alliances, gaining positive press and key opinion leader endorsements. For our Regenerative Economy startups we seek to advance them to 10,000 subscribers/customers and then seek a strategic partner/buyer. Our Regenerative Economy portfolio is part of our overall commitment to give back to society above and beyond the social good of our products.

## Overview of Business Units

- Leonhardt's Launchpads by Cal-X Stars Business Accelerator, Inc.
- Leonhardt's Launchpads Utah, Inc.
- Leonhardt's Launchpads NorCal

### Regenerative Medtech - Organ Regeneration

- a. Heart and Cardiovascular
- b. Brain regeneration
- c. Cosmetic and Personal Care
- d. Major Organ Regeneration
- e. Cancer Therapies

### Regenerative Economy

- a. The California Stock Exchange™
- b. Kindheart Lionheart Media & Publishing
- c. Leonhardt Food & Beverage.
- d. Incubators & Accelerators.

## Facilities, Assets & Equipment

Leonhardt's Launchpads NorCal has lab space and faculty support at a facility on the University of Northern California near Santa Rosa, California.

Leonhardt's Launchpads by Cal-X Stars Business Accelerator, Inc. has office space in Santa Monica and access to labs in the Los Angeles area including animal research facilities at LABiomed and lab space at Pasadena BioScience Incubator.

Leonhardt's Launchpads Utah, Inc. has office space at the C&S Business Incubator in Salt Lake City, Utah and lab space at USTAR's BioInnovations Gateway in South Salt Lake City, Utah. The USTAR BioInnovations Gateway membership gains us access to over \$100 million of equipment at 6 facilities. We also have access to a number of labs at the U of Utah via our research collaborations.



# Intellectual Property, Key Agreements, Grant Awards & Research Collaborations

- 3 issued patents - stem cell homing, blood vessel growth, combination with cells & growth factors.
- 4 issued patents option licensed from Caltech - pulsating cuffs, magnetic fluid pulsed waves, miniature stent pump.
- 4 issued patents option licensed from Neuro Code Tech Holdings - reading electrical communication cancer tumors and jamming signals.
- 100 new patent claims pending - organ regeneration, blood clot prevention.



# Financial Progress

- We invested \$187,000 in 2016 advancing our platform Licensable Technology Platforms and startups.
- Over \$2,300,000 has been invested in our technology and startup platforms total to date.
- QIG Greatbatch invested \$50 million into developing our OEM sourced bioelectric micro-stimulator independently.
- Fluid Synchrony LLC invested \$100,000 directly in us and \$2 million in developing a micro infusion pump.



## Regenerative Medtech – Organ Regeneration & Recovery

1. Heart & Cardiovascular
2. Brain
3. Cosmetic and Personal
4. Major Organ Regeneration
5. Cancer

## Regenerative Economy

1. The California Stock Exchange™
2. Kindheart Lionheart Media & Publishing
3. Leonhardt Food & Beverage
4. Leonhardt Incubators & Accelerators

Startup	Product	Current Valuation	Target Exit Valuation Goal	Share/ Unit Price	Website
BioLeonhardt	Heart Regeneration	\$30 million	\$3 billion	\$3	bioleonhardt.com
CerebraCell	Brain Regeneration	\$10 million	\$300 million	\$4.35	leonhardtventures.com/cerebracell
Stem Cell Bra	Breast Regeneration	\$10 million	\$300 million	\$1	stemcellbra.com
EyeCell	Eye Regeneration	\$6 million	\$300 million	\$2.6	leonhardtventures.com/eyecell
AortaCell	Aorta Regeneration	\$5 million	\$300 million	\$1.67	leonhardtventures.com/aortacell
BioPace	Biological Pacemaker	\$3 million	\$300 million	\$1	leonhardtventures.com/biopace
Valvublator	Heart Valve Regeneration	\$3 million	\$300 million	\$1	valvublator.com + leonhardtventures.com/valvublator
CoroStim VibroCell	Vibrational Prevention Clots	\$6 million	\$300 million	\$2.6	leonhardtventures.com/corostim
HeartScore	Genomics and Bioelectric Based Heart Failure & Stroke Management	\$10 million	\$300 million	\$4.35	heartscore.co
DentaCell	Dental Gum Regeneration	\$6 million	\$300 million	\$2.6	leonhardtventures.com/dentacell
OrthodontiCell	Tooth Movement Accelerator + Stabilization	\$6 million	\$300 million	\$2	leonhardtventures.com/orthodonticell
PancreaCell	Pancreas Regeneration	\$3 million	\$300 million	\$1	leonhardtventures.com/pancreacell
RegenaLung	Lung Regeneration	\$6 million	\$300 million	\$2	leonhardtventures.com/regenalung
CancerCell	Cancer Tumor Stoppage and Regeneration	\$10 million	\$300 million	\$1	leonhardtventures.com/cancercell
EndoCell (note in process of merging into VascuStim)	Artery Regeneration	\$3 million	\$300 million	\$1	leonhardtventures.com/endocell
MyoStim ED	Erectile Dysfunction	\$3 million	\$300 million	\$1	leonhardtventures.com/myostimED
SkinCell Stimulator (by MyoStim Skin)	Skin Regeneration	\$3 million	\$300 million	\$1	leonhardtventures.com/myostim-skin
VascuStim (formerly MyoStim Peripheral)	Limb Regeneration	\$10 million	\$300 million	\$4.34	leonhardtventures.com/vascustim

Startup	Product	Current Valuation	Target Exit Valuation Goal	Share/ Unit Price	Website
ECMO Cath (note 50.1% owned by RegenaLung)	Artificial lung catheter	\$5 million	\$300 million	\$1	Pending
Second Heart Assist, Inc.	Circulatory Assist Pump Catheter	\$15.9 million	\$688 million	\$3	leonhardtventures.com/second-heart
HairCell	Hair Regeneration	\$10 million	\$300 million	\$1	leonhardtventures.com/haircell
BladderCell	Bladder Regeneration	\$10 million	\$230 million	\$1	leonhardtventures.com/bladdercell
BioLeonhardt Whole Body	Whole Body Regeneration	\$30 million	\$3 billion	\$1	leonhardtventures.com/wholebody
LiverCell	Liver Regeneration	\$3 million	\$230 million	\$1.30	leonhardtventures.com/livercell
KidneyCell	Kidney Regeneration	\$2.3 million	\$230 million	\$1	leonhardtventures.com/kidneycell
EarCell	Ear Hearing Regeneration	\$2.3 million	\$230 million	\$1	leonhardtventures.com/earcell
MucosaCell	Sub-mucosa Regeneration	\$2.3 million	\$230 million	\$1	Pending
PressureStim	Bioelectric Blood Pressure Management	\$5 million	\$1 billion	\$1	biospace.com/News/leonhardt-team-launches-pressurestim-bioelectric/459315
CerebraCell Brain-N-Hance (50.1% owned by CerebraCell)	Bioelectric Cognitive Function Improvement	\$5 million	\$1 billion	\$1	app.slidebean.com/p/zXQw13FfuD/CerebraCellBrain-N-HanceTM
RegenaLung COPD (note – 50.1% owned by RegenaLung)	Bioelectric COPD treatment	\$2.3 million	\$300 million	\$1	leonhardtventures.com/regenalung
California Stock Exchange TM	Social Good Stock Exchange + Crowdfund	\$30 million	\$900 million	\$3	calstockexchange.com
Cal-X Stars Business Accelerator, Inc. (also known as Leonhardt's Launchpads and Leonhardt Incubators & Accelerators)	Regenerative Medtech + Economy Startup Incubators and Accelerators	\$30 million	\$300 million	\$0.36585	calxstars.com + calxelerator.com + leonhardtslaunchpads.com + labiohub.org + startupcalifornia.org + leonhardtventures.com/leonhardtslaunchpadsutah
Kindheart Lionheart Media & Publishing	Social Good Media Including TV Network	\$30 million	\$1 billion	\$13.04	kindheartlionhearttv.com + kindheartlionheart.com
Leonhardt Food & Beverage	Social Good Food & Beverage Co. – 50% of All Profits Dedicating to Organ Regeneration Research at Leonhardt's Launchpads	\$3 million	\$200 million	\$1	leonhardtvineyards.com + lucillescafe.com
Leonhardt's Launchpads Utah, Inc.	Organ Regeneration and Recovery Focused Innovation & Startup Accelerator	\$5.3 million	\$230 million	\$1	leonhardtventures.com/leonhardts-launchpads-utah

**Note – Prices and valuations in red indicate price + valuation increases implemented today. Entries in green are New.**

In general Leonhardt Ventures (Leonhardt Vineyards LLC DBA Leonhardt Ventures) owns 50.1% of each startup. Cal-X Stars Business Accelerator, Inc. (Operating as Leonhardt's Launchpads) owns 9% at seed stage and has pre-emptive right to acquire up to 20% during acceleration period of 5 years via pass through investments (but often will acquire much more). Startups incubating in Leonhardt's Launchpads Utah, Inc. grant 9% equity to that entity in exchange for their lab, financial, office and personnel support and grant Leonhardt's Launchpads Utah, Inc. preemptive right to acquire 20% ownership during the 5 year course acceleration support period (often they will acquire an even greater stake via pass through investments).





## Brittany Brown, CPA

Interim CFO Leonhardt's Launchpads

Board Advisor

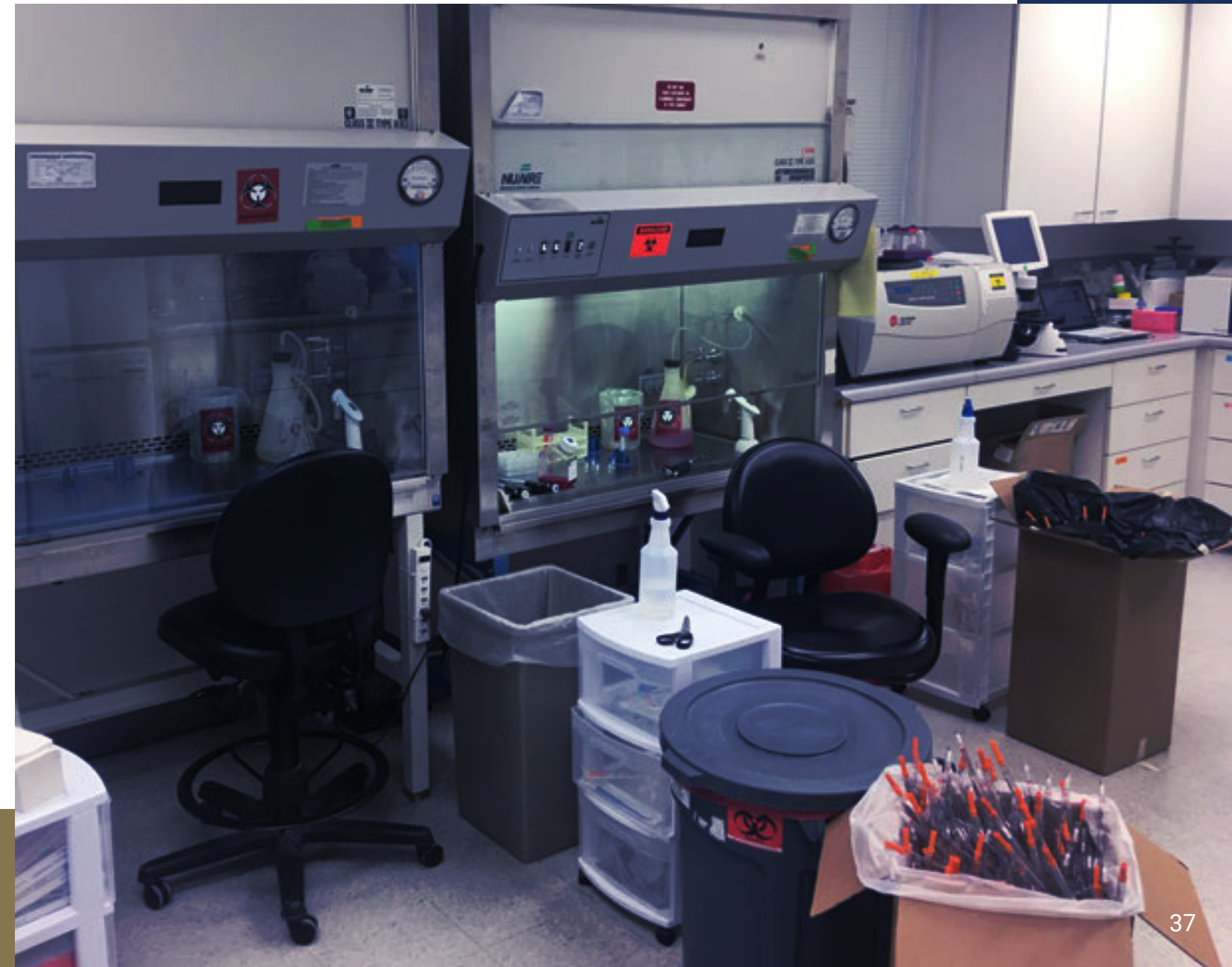
*"Leonhardt's leading competitors developing just one or two products are burning through \$13 to \$20 million cash annually. Leonhardt's Launchpads is developing more than 30 products with under 1/10th*

*that burn rate. This is achieved via non-dilutive to shareholders grant support and over 140 advisors, suppliers and employees working for shares or options instead of cash."*

*"Our cost savings is achieved by our bootstrapping model that reduces overhead by utilizing shared resources such as the BioInnovations Gateway research labs where we pay only \$500 a month and have access to over \$30 million of equipment, resources and personnel. Our relationships with Biomerics for manufacturing + engineering + quality assurance, QIG Greatbatch for micro stimulator development and production and Fluid Synchrony for micro pump development serve this purpose as well. We align with numerous universities to prove out our technologies at low cost. We launch our pilot clinical trials most often OUS which keeps costs down."*

## Education & Experience

- CEO Founder LedgerGurus
- CFO DSB Utah
- Advisory Professional Squire & Co. Public Accounting
- Intern KPMG Accounting
- Certified Public Accountant
- Master of Science Accounting Brigham Young University
- Bachelors of Science Accounting Brigham Young University





## Todd Seiger

Chief Advisor Reimbursement

Leonhardt's Launchpads & Second Heart Assist, Inc.

*"Getting the CMS and insurance reimbursement pathway right is critical to any medtech startup and can make or break their finances. Leonhardt's Launchpads and Second Heart Assist, Inc. are*

*committed to getting this right. They have addressed reimbursement up front and have done the research needed to get it correct. I myself have over 20 years of circulatory assist support reimbursement experience. We have developed a plan and manual to guide our investigational centers and future customers professionally through the reimbursement process. This adds value."*



# Board of Directors & Corporate Governance

## Board of Directors

### Voting Directors

- Howard J. Leonhardt - Executive Chairman
- Dr. Mark Cunningham
- Jeff Donofrio
- Alex Richardson
- Laurelle Johnson
- Dr. Leslie Miller
- Jeremy Koff - Compensation Committee Chair
- Brittany Brown - Interim CFO, Secretary and Treasurer, Audit Committee Chair

### Non-Voting Directors

- Paul Norman
- Derek Kahn
- Richard Koffler
- Ken Evans
- Walter Grieves

Board members are compensated \$10,000 (cash deferred or stock) per board meeting attended and 80,000 shares annually.

### Leonhardt's Launchpads Utah, Inc.

- Howard Leonhardt
- Dr. Leslie Miller
- Dr. Dinesh Patel
- Jeremy Koff

### Non-Voting Advisory Board Utah

- Dr. Harrison Lazarus
- Devin Thorpe
- Scott Marland
- Michael Angerbauer
- Brittany Brown
- Allen Turner
- David Robinson
- Chris Mismash
- Stuart Hill
- Kelsie Fortner

## Executive Compensation

**No executives took cash salaries in 2016.**

Howard Leonhardt will be compensated a total of \$130,000 salary + benefits in 2017 paid in part from the innovation/startup accelerators and Second Heart Assist, Inc. cash flow permitting.



# Advisory Board & Management Team

Leonhardt Ventures and Leonhardt's Launchpads has over 80 business mentors and 40 scientific advisory board advisors

⇒ <http://calxstars.com/team-cal-x/>

## 2017 - 2019 Goals

- Gather positive supporting data, pre-clinical and clinical, across all of our products.
- Obtain additional patent claims.
- Secure additional key opinion leader endorsements.
- Gain positive press.

# Progress Report

by Startup / Licensable  
Technology Platform

# Regenerative Medtech

## Heart & Cardiovascular

### BioLeonhardt

Heart Regeneration



- Won \$150,000 research grant working with University of Utah for heart regeneration studies
- Filed numerous new heart regeneration patent claims including PDGF and HIF 1 alpha
- Built and tested numerous bioelectric stimulation prototypes
- Built first pacing infusion lead prototypes
- Built and tested micro infusion pumps working with Fluid Synchrony LLC of Pasadena, CA
- We received \$150,000 funding commitment via Fluid Synchrony LLC for animal studies for micro infusion pump + bioelectric stimulator combination
- Updated animation video
- Assembled supporting data on website (over 100 published papers)
- Updated slide deck
- Sourced micro (size of quarter) implantable stimulator supply with extended battery life and precise control of signaling

### AortaCell

Aorta Regeneration

- Held meetings with potential strategic investors
- Developed animal study protocol outline
- Recruited key opinion leaders to advisory board: Dr. Harrison Lazarus, Dr. Barry Katzen, Dr. Sam Ahn, Dr. Jacob Cynamon, Dr. Nic Chronos
- Created animation video
- Created BETA website
- Assembled supporting data on website
- Developed slide deck

## BioPace

### Biological Pacemaker Regeneration

- Initiated collaborative research at University of Utah with Dr. Alonso Moreno
- Recruited Dr. Nicholas Peters leading electrophysiologist to advisory board
- Filed NIH grant application - pending
- Created BETA website
- Assembled supporting data on website



## Valvulator

### Heart Valve Regeneration

- Filed patent application for device
- Hired Biomerics Advanced Catheter to build prototypes
- Created animation video
- Created BETA website
- Assembled supporting data on website

## CoroStim VibroCell

### Vibrational Energy to Prevent Clots, Plaque, Calcification

- Filed patent application for device
- Added location-specific harmonic reading

## HeartScore

### Genomics And High Fidelity Monitoring & Bioelectric Based Heart Failure & Stroke Management

- Added CerebraCell "Brain Saving Helmet" to product lineup
- Added stroke management protocol
- Met with NeuroWorx Utah to discuss research collaboration
- Created BETA website
- Assembled supporting data on website
- Developed slide deck



## EndoCell –

### Artery Regeneration

- Recruited Dr. Warren Sherman as Chief Medical Officer
- Recruited Dr. Jorge Genovese as Chief Scientific Advisor
- Developed research collaboration with Mercator Medical
- Developed research protocol with Dr. Dayu Teng of Sanford Regenerative Medicine Institute San Diego
- Created BETA website
- Assembled supporting data on website

## VascuStim (formerly MyoStim Peripheral)

### Limb Salvage And Blood Flow Improvement



- Completed 7 successful clinical patients in Mexico with just SDF-1 and VEGF signals only
- Met with Dr. Larry Kraiss Chief of Vascular Surgery U of Utah about potential research collaboration
- Met with team in Czech Republic about continued research collaboration
- Recruited Dr. Barry Katzen, Dr. Nic Chronos, Dr. Jacob Cynamon, Dr. Sam Ahn to Clinical and Scientific Advisory Board
- Created BETA website
- Assembled supporting data on website (over 100 published papers)

## PressureStim

### Wireless Diabetic Foot Ulcer Treatment

- Developed technology platform
- Developed bioelectric protein expression signals to improve arterial compliance
- Sourced micro stimulator
- Issued press release on technology unveiling and startup launch

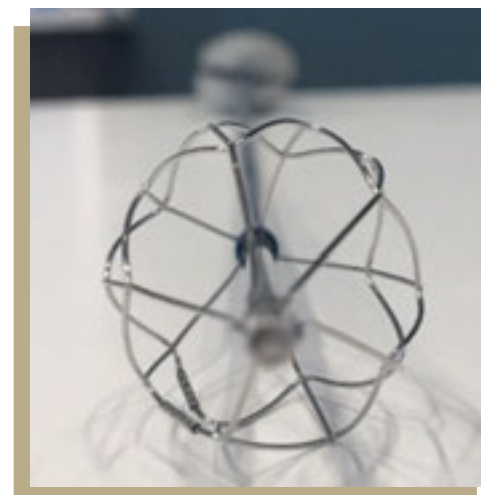
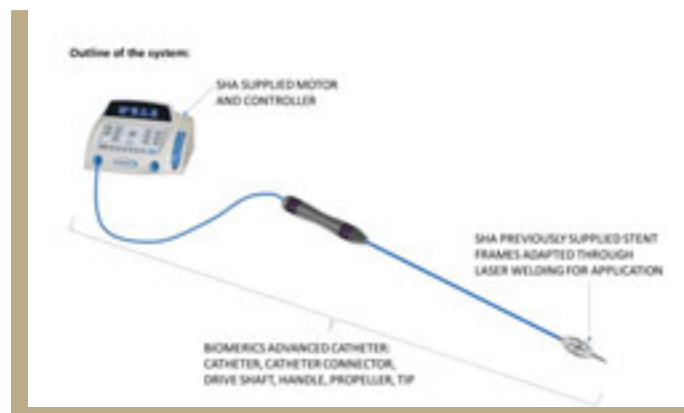


## Second Heart Assist, Inc.

Pipeline of Platform Technologies for Circulatory Assist Support



- Highest flow with lowest RPMs circulatory assist pump. This should minimize hemolysis and risk of mechanical breakdown.
  - 4.5 liters per minute flow at 4500 RPMs. Competitors have to spin impellers at 18,500 to 50,000 RPMs to reach 4.5 liters per minute flow through device which increases risk of hemolysis and mechanical breakdown. They do not reach 4.5 liters per minute true flow in the patients with these RPMs only these flow rates through the small orifices of their small diameter catheters. The actual patient flow improvement is under 1/2 this device flow rate ie; under 2.25 liters per minute patient flow improvement. Since our device occupies nearly the entire inner diameter of the aorta our 4.5 liters per minute flow through device is also 4.5 liters per minute flow improvement for patient.
- Designed for easy and safe placement just above the renal arteries.
- Patented pulsating cuff aortic stent placed in aorta above lower impeller aortic stent for flow and hemodynamic improvement optimization.
- First circulatory assist pump with option for wireless power.
  - Temporary circulatory assist support via endovascular catheter.
  - Chronic support via aortic stent implant.
- Patent pending harmonic resonance vibrational energy technology to reduce risk of blood clot formations.
- Patent pending bioelectric signal emitting micro implants in aortic stent to control healthy protein expressions to increase elasticity of aorta and other arteries, to promote organ regeneration, healthy arteries and healthy balanced blood pressures.
- Designed to be combined with the BioLeonhardt (bioleonhardt.com) bioelectric + micro infusion pump + mixed stem cell and growth factors composition heart regeneration technology to attempt to aide in total regeneration of failing hearts over time.
- Designed to be combined with Vascustim (leonhardtventures.com/vascustim) bioelectric + micro infusion pump + mixed stem cell and growth factors composition for limb salvage, diabetic leg and foot ulcer healing and critical limb ischemia treatment to attempt to stave off amputations.



## Jeff Donofrio

President & Board Director Second Heart Assist, Inc.

Board Director Leonhardt's Launchpads by Cal-X Stars Business Accelerator, Inc.

Board Director BioLeonhardt

Board Director HeartScore

*"Second Heart Assist, Inc. has developed what we believe to be an unmatched technology platform pipeline for circulatory assist support. We are confident our design will maximize cardio and renal function recovery while minimizing risk of thrombosis, hemolysis, mechanical breakdown and heart valve damage. We are entering well controlled studies at esteemed institutions to prove this out."*



# Brain

## CerebraCell

### Brain Regeneration

- Filed numerous patent claims
- Built and tested non-invasive helmet design
- Met twice with UCLA Brain Institute research teams about collaboration. Working on proposed grant application now
- Recruited Dr. Santosh Kesari as Chief Medical Officer
- Initiated research collaboration with Pacific Neurosciences Institute of Santa Monica, California a Providence St. Johns affiliate
- Presented at Neuro Tech Leaders Forum
- Created BETA website
- Assembled supporting data on website (over 40 published papers)
- Developed slide deck

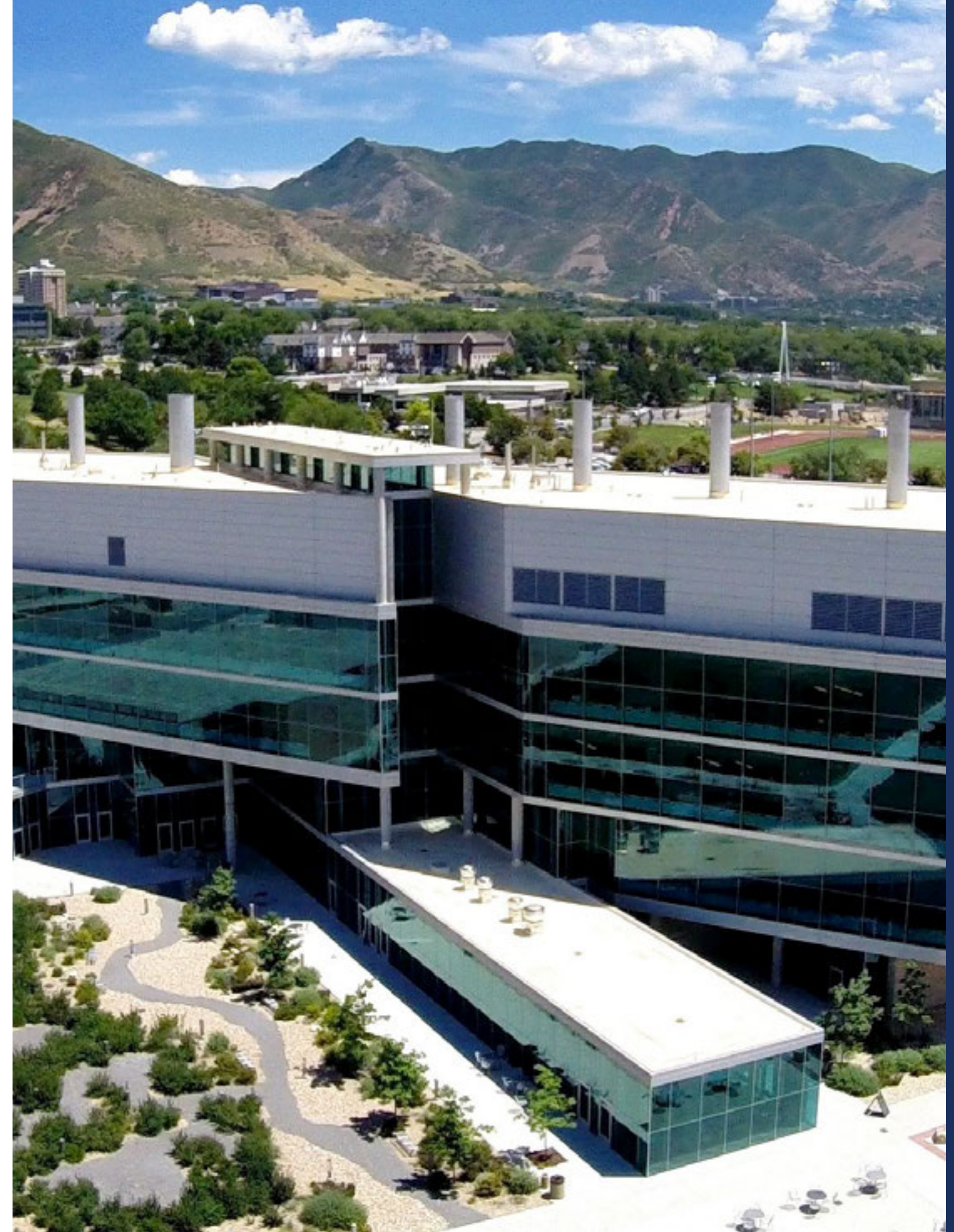


## CerebraCell Brain-N-Hance

### Cognitive Function Improvement



- Filed patent application
- Presented at Neuro Tech Leaders forum
- Held meeting with Los Angeles based Kernel about research collaboration
- Met twice with UCLA Brain Institute about potential research collaboration

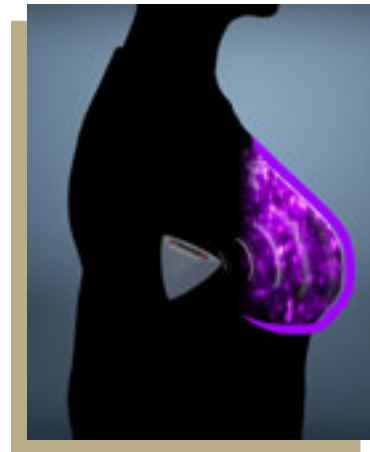


## Cosmetic & Personal Care

### Stem Cell Bra

#### Breast Regeneration

- Compiled data from sheep study in Argentina
- Achieved an average of 20% breast tissue growth with only one hour stimulation with two signals (SDF-1 and VEGF) every other day for 4 weeks
- Preparing for next larger sheep study with more signals
- Created new animation video
- Created BETA website
- Signed aboard Dr. Joel Aronowitz Cedars Sinai UCLA as Chief Medical and Scientific Advisor



### DentaCell

#### Dental Gum Regeneration & Tooth Pulp Storage



- Signed up FDA certified site for tooth pulp processing
- Developed draft brochure
- Created BETA web site
- Developed mouth piece design
- Added PDGF signal
- Developed draft marketing brochure and poster

### OrthodontiCell

#### Cuts In Half Dental Brace Wearing Time

- Developed and tested prototype
- Met with three billion dollar potential strategic partners
- Met with leading researcher Dr. Sunil Kapilla at UCSF about research collaboration
- Signed up Forysth Institute-Tufts University to complete first animal study
- Signed Biomerics Utah to build conductive polymer mouth pieces
- Secured bioelectric micro-stimulator supply from QIG Greatbatch
- Signed about Dr. Susan Bahoul of Tufts University as advisor
- Signed aboard Dr. John Marchetto as Chief Medical Officer and President
- File numerous patent claims
- Developed technology to freeze teeth position in addition to accelerating tooth movement
- Filed trademark application for Tooth Movement Accelerator™



## SkinCell Stimulator by MyoStim Skin

### Skin Regeneration

- Met with numerous research centers in the Los Angeles area
- Created BETA website
- Created two animation videos
- Sourced face mask
- Developed research protocol
- Assembled supporting research articles



### MyoStim ED

#### Erectile Dysfunction Treatment

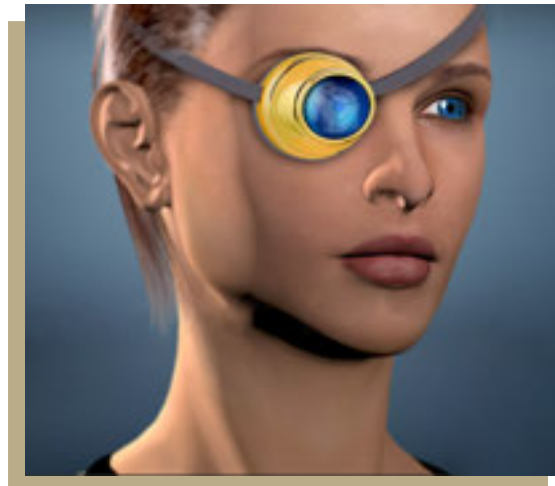
- Filed grant application with USTAR
- Signed aboard Dr. Nelson Cadavid-Gonzalez as Chief Scientific Advisor
- Developed BETA Website
- Assembled supporting scientific articles
- Developed research protocol
- HairCell – hair regeneration
- Completed prototype development
- Filed patent applications.
- Developed sourcing for MSCs and amniotic fluid.
- Developed research protocol.
- Held research collaboration meetings with team in Spain.
- Prepared for pilot dose escalation clinical trials in Mexico and Argentina.
- Signed aboard Derek Kahn as President



# Major Organ Regeneration

## EyeCell

### Eye Regeneration



- Won \$62,500 research grant with potential for another \$62,500
- Built and tested prototypes
- Completed Milestone I grant lab studies
- Developed BETA website
- Created animation video
- Assembled scientific supporting articles
- Created slide deck
- Recruited Dr. Patrick Johnson as Chief Medical Officer.
- Initiated research collaboration with Dr. Mary Hartnett U of Utah Moran Eye Center
- Signed aboard Dr. Dinesh Patel as an advisor
- Signed aboard Dr. King Liu University of Northern Californai as an advisor

## About EyeCell

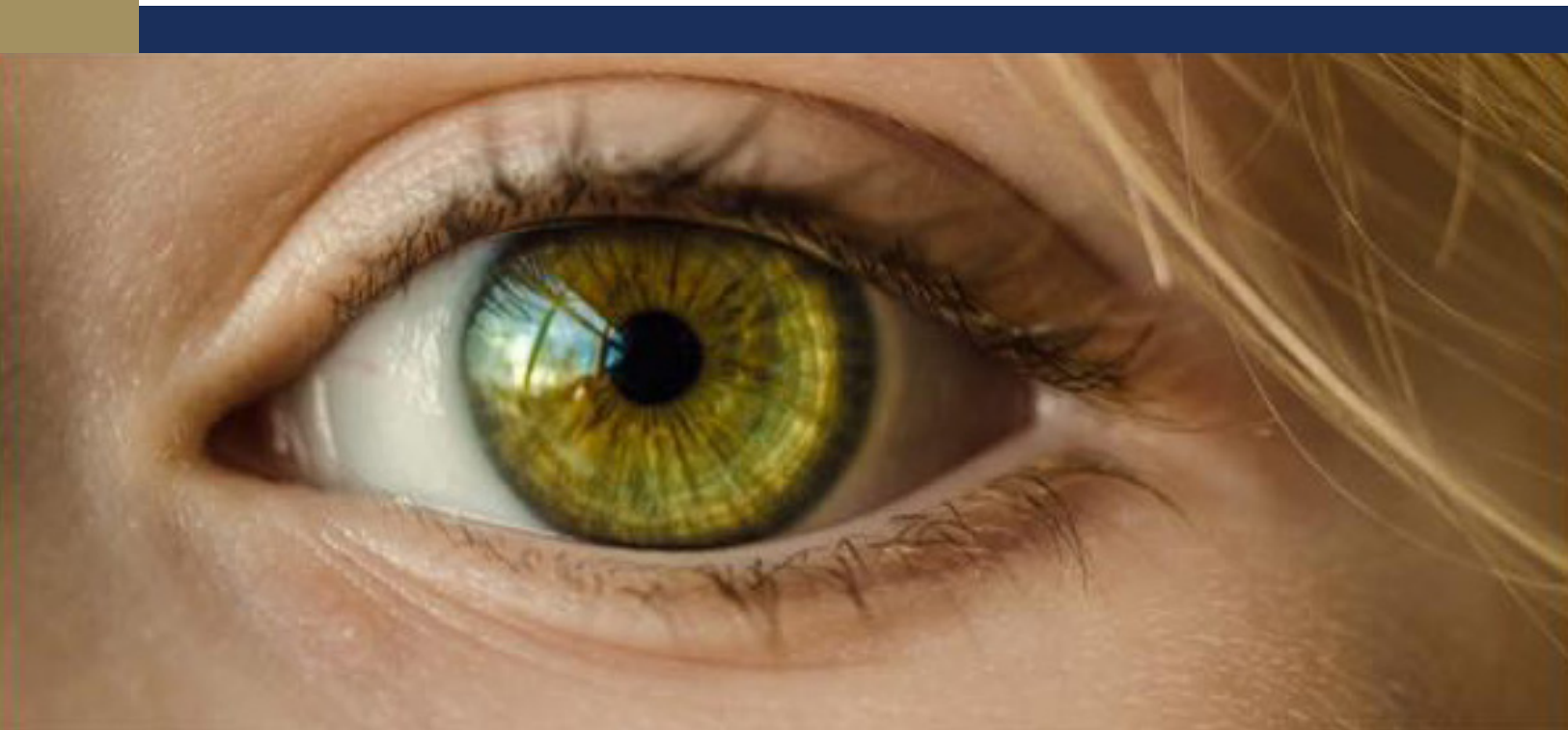
EyeCell is a startup within the Leonhardt's Launchpads Utah, Inc. accelerator and was founded in February 2015. The company is committed to regenerating optic cells using stem cells naturally produced by the patient in order to reverse the effects of macular degeneration, Stargardt's disease, and retinitis pigmentosa. EyeCell's ultimate goal is the restoration of sight for those suffering from degenerative eye diseases.

The platform technology for EyeCell is comprised of three components - a microstimulator providing bioelectric controlled protein expression, a refillable, programmable repeat-delivery-capable infusion pump and a stem-cell-based mixed composition optimized for ocular tissue regeneration.

EyeCell won \$124,443 in grant funding through USTAR's competitive Technology Acceleration Program (TAP) in January 2017. That money will fund the next round of testing to identify the ability to release proteins within eye tissues with bioelectric signals. The company also took advantage of the BioInnovations Gateway, a technology incubator partnership between Granite School District and USTAR. Here they had access to high tech equipment that enabled prototype development.

EyeCell anticipates being on the market within five year, with approval from the FDA. The company is mitigating FDA rejection with strong academic support and sufficient testing.

There are currently no products similar to EyeCell that aim to regenerate retinal tissue in order to provide a therapeutic effect for patients. The market for retinal degenerative diseases is already very large and will nearly double in size in the next 20 years. Nearly 175 million people suffer from retinal degenerative diseases, which accounts for \$343 billion spent worldwide. These numbers will only grow with an aging demographic. EyeCell hopes to capture and conservative 2.5% of the \$343 billion, equaling \$8.575 billion -- money which would primarily stay in the Utah economy. 25% market share also equates to roughly 50 million patients who would benefit from EyeCell. In order to maintain an operation large enough tot serve this high number of people, the company projects the creation of nearly 1,000 new, high-paying jobs in Utah.



**Timeline of Key Events:**

- 2013:** Dr. Y. King Liu receives U.S. patent for an electro-stim-puncture eye patch
- 2015:** Leonhardt's Launchpads Utah, Inc. is formed
- 2015:** Dr. Ed Kandaot completes over 100 cases of MIPD current treatments for eye disorders
- Feb 2015:** EyeCell is founded
- Jan 2017:** Awarded \$124k in USTAR TAP grant funding
- Mar 2017:** Milestone 1 - In vitro testing completed
- Mar 2017:** Milestone 2 - Organize protocol and subjects for animal testing
- Apr 2017:** Milestone 3 - Commencement of animal studies

## PancreaCell

### Pancreas Regeneration

- Recruited Dr. Camillo Riccordi Chairman of Diabetes Research Foundation as Chief Medical Advisor
- Recruited Dr. Nicholas Chronos as Chief Scientific Advisor
- Recruited Dr. Harish Kapoor as President
- Filed grant application with USTAR
- Created two animation videos
- Developed relationship with four clinical research sites in China
- Preparing NIH and NSF grant applications
- Preparing CIRM grant application
- Recruited Dr. Charles Murtaugh at University of Utah Pancreas Regeneration Lab as an advisor



## RegenaLung

### Lung regeneration

(Includes 50% Owned Subsidiary RegenaLung COPD)

- Held potential research collaboration meeting with Mayo Clinic
- Held potential research collaboration meeting with Cedars-Sinai UCLA
- Recruited Richard Koffler as President
- Recruited Dr. Syde Taheri as Chief Medical Advisor COPD
- Developed BETA website
- Assembled scientific supporting articles
- Developed slide deck



## LiverCell

### Liver Regeneration

- Developed research collaboration with Duke University
- Signed aboard Ben Boytor as President
- Developed BETA website
- Developed slide deck
- Assembled scientific supporting articles



## KidneyCell

### Kidney Regeneration

- Developed BETA website



## EarCell

### Hearing Regeneration

- Developed beta website
- Hired Ken Evans as President
- Assembled Scientific Articles



## BladderCell

### Bladder Regeneration

- Held meetings with potential collaborative researchers in Toronto and in India
- Recruited Laurelle Johnson as President
- Identified potential strategic partners
- Created BETA website
- Assembled supporting scientific articles



## BioLeonhardt

### Whole Body Regeneration

- Filed patent applications
- Created animation video
- Created BETA website
- Tested wireless transmission of signals
- Held conference call with National Science Foundation
- Preparing for June 14th 2017 NSF grant application



## MucosaCell

### Sub Mucosa Regeneration

- Developed research collaboration with Dr. Stuart Williams University of Louisville
- Signed aboard Dr. Byran Jones U of Utah Moran Eye Center as an advisor
- Signed aboard Dr. Ed Kondrot as an advisor



## Cancer Treatment

### CancerCell

Bioelectric Cancer Tumor Treatment, Followed by Organ Regeneration

- Signed patent rights agreement with Neuro Code Tech Holdings of New Mexico
- Signed aboard Dr. Santosh Kesari of John Wayne Cancer Institute as Chief Medical Advisor
- Initiated discussions with Huntsman Cancer Foundation U of Utah
- Filed numerous new patent claims
- Developed prototype of brain cancer helmet

# Regenerative Economy

The four portfolio startups of our **Regenerative Economy** Group all made advancements in 2016/17. (1) The California Stock Exchange™, (2) Kindheart Lionheart Media & Publishing, (3) Leonhardt Food & Beverage and (4) Leonhardt Incubators & Accelerators.

## The California Stock Exchange™

- Launched Cal-X 30 Social Good Impact Fund powered by Motif Investing
- Created Cal-X Crowdfund Connect website
- Published Top 20 Tips for Crowdfunding Success
- Spoke at over a 50 crowdfunding conferences since 2012
- Developed and published 5 year plan for Cal-X.
- Launched Cal-X Microloans in collaboration with ZimpleMoney
- Launched Fashion Pretail for crowdfunded pre-sales of fashion designs

## Kindheart Lionheart Media & Publishing

- Reached over 3 billion views of programs on Kindheart Lionheart TV
- Advanced development of screenplay for Dolphin Smiles: The Legend of Kindheart Lionheart with the help of the UCLA Writers Program
- Co-produced Melody an inspirational short film and entered national contest. Placed in top 60 in nation.
- Shot pilot episode of Love Roller Coaster
- Wrote 3 scripts for California Love and created introduction video
- Wrote show plan for Love Dialogues by Tony Cronin.
- Launched Lions Den Online Crowdfunding TV Show
- Created program Great Covers of Great Speeches
- Moved the Kindheart Lionheart Show from internet audio radio to Facebook Live video format
- Launched Kindheart Lionheart Startup Media Support Services in collaboration with Fizzpopmedia, TubeStart and Gas Money Productions

## Leonhardt Food & Beverage

- 90 cases of 2012 Leonhardt Vineyards Cabernet Sauvignon in stock
- Agreements in place with other family wineries for Chardonnay and Zinfandel production
- Launched California Wine Financing to help small wineries and breweries with crowdfunding tools
- Met with Lionheart Cider in Minneapolis and developed 5 year plan for Western States distribution.
- Laid foundation for Leonhardt Brewworks oak aged beer
- Opened dialogue with Lionheart Lager in South Africa about license to distribute to the USA
- Secured limited distribution sales rights to Lionheart Wines of California
- Developed franchise and food truck plan for Lucille's American Cafes
- Developed solar powered mini electric food truck and crowdfunding + micro loan platform for franchisees



## Leonhardt Incubators & Accelerators

- Leonhardt's Launchpads has recruited over 35 world opinion leaders to its scientific advisory board
- Leonhardt's Launchpads hired Dr. Leslie Miller former 10 year Chairman of Cardiovascular Medicine at the University of Minnesota as Chief Medical Officer
- Leonhardt's Launchpads has recruited over 100 experienced members to its business mentorship advisory board
- Leonhardt's Launchpads Utah, Inc. acquire subsidized research lab space at BioInnovations Gateway
- Leonhardt's Launchpads Utah, Inc. hired 3 bioengineers and 3 biologists to work on their research projects in Utah
- Leonhardt's Launchpads Utah, Inc. won two research grants for eye and heart regeneration in collaboration with University of Utah researchers
- Leonhardt's Launchpads Utah, Inc. spun out Second Heart Assist, Inc. into a stand alone Utah C corporation
- Leonhardt's Launchpads Utah, Inc. recruited Brittany Brown a CPA as Interim CFO
- Leonhardt's Launchpads Utah, Inc. built a local advisory board in Utah including Dr. Dinesh Patel former founder of TheraTech and Chairman of USTAR
- Leonhardt's Launchpads NorCal at the University of Northern California Science & Technology Innovation Center is incubating CerebraCell and EyeCell
- Leonhardt's Launchpads has established a research collaboration with the Gharib Lab at the California Institute of Technology (Caltech)
- Startup California has thousands of resource pages for California startups on its web page
- LABioHub has dozens of resource pages for Los Angeles life science companies on its web page
- CalXelerator has graduated 30 startups so far through its 108 day create to great program.
- SciAccelerator is developing a 108 day startup launch bootcamps (fee and equity pay for startup support services) in California and Utah for science based startups that will launch late 2017 or early 2018
- Leonhardt's Launchpads hired CapShare of Utah for shareholder management services.
- Leonhardt's Launchpads entered an agreement with Biomerics Utah and Biomerics Advanced Catheter of Minnesota for manufacturing, quality control, FDA documentation and engineering services for its products



An aerial photograph of a winding asphalt road through a mountainous landscape. The sun is low on the horizon, creating a warm, golden glow and long shadows. The terrain is covered in green vegetation and scattered rocks. The road curves through the hills, leading the eye from the foreground into the distance.

# Our Mission

- Discover and develop innovative organ regeneration therapies that extend quality of life.
- Give back to society through social good impact innovations.
- We focus the lions share of our resources on organ specific applications for our core platform technology of a (1) bioelectric protein expression stimulator + (2) programmable, re-fillable micro infusion pump + (3) multiple component cell + growth factor based organ regeneration composition.

# Key Figures

## 2016

**500,000**

patients have been treated with Leonhardt inventions worldwide since our founding.

**\$6 Billion**

total sales of Leonhardt inventions worldwide since our founding.

**37**

world opinion leading scientists and clinicians on our Scientific Advisory Board & collaborative research team.

**20**

U.S. heart failure department chairs from leading institutions attended our design review and clinical trial planning meetings at the A.C.C. and HFSA.

**13**

patented or patent pending bioelectric signals for organ regeneration promoting protein expressions.

**254**

issued U.S. Patent Claims granted to Howard J. Leonhardt our lead inventor and founder.

**120**

new provisional patent claims files in 2016 alone by Leonhardt Ventures.

**\$50,000,000**

invested in developing our bioelectric stimulator which is the world's smallest with the longest battery life and the most precise control of signaling. Only usable for organ regeneration with our patented and patent pending signals.

**\$2,300,000**

in NSF SBIR grants received to develop our programmable, refillable micro infusion chip.

**\$18,000,000**

in approximate amount invested in developing brain and head helmet for CerebraCell, HairCell and CerebraCell Brain-H-Hance.

**\$6,300,000**

in approximate amount our founder Howard J. Leonhardt has personally invested in developing our organ regeneration platform technologies over time.

**\$100,000,000**

in approximate value of research equipment and resources available to us via our USTAR grant supported lab at BioInnovations Gateway Utah.

**\$275,000**

USTAR grant awards received in 2016 for heart and eye regeneration studies at U of Utah.

**21**

major conferences we presented data at in 2016.

**20%**

amount of new breast tissue growth volume achieve in sheep study in Argentina for Stem Cell Bra with only 1 hour of stimulation, every other day for four weeks, with only three of our patented signals. No side effects or adverse effects observed.

**30**

breakthrough innovation startups in Leonhardt's Launchpads accelerators.

**3,000,000,000**

views of our curated programs on our Kindheart Lionheart TV Network

**120,000**

bottles of California wine produced by Leonhardt Vineyards LLC since our founding in 2000.

**\$140,000,000**

raised by Leonhardt Ventures since our founding to advance forward all of our inventions and startups. This gives the basis for our organizational learning that is the foundation of our future.

**66%**

success rate in research grant application filings in 2016 = 3 out of 5.

# Major Historical Milestones

**1982** - Leonhardt Ventures founded as H.J. Leonhardt & Co.

**1983** - Built out numerous cardiac cath labs and ICU's in eastern hemisphere with American General Medical Corp.

**1985** - Began research collaboration with Dr. Robert O. Becker the author of Body Electric for improving blood flow.

**1986** - World Medical Corp. formed to help small cardiovascular device manufacturers reach export markets.

**1987** - \$3.2 million in sales. Developed WorldMed brand of cardiovascular catheters.

**1987** - Worked with Labcor and DMG to develop heart valve and oxygenator systems.

**1988** - World Medical Manufacturing Corporation formed to produce cardiovascular devices.

**1988** - Developed full lineup of patented predictably compliant cardiovascular balloon catheters - PolyCath™.

**1988** - Working with Dr. Race Kao completed first stem cell repair of heart tissue study in dogs.

**1988** - Developed and patented first percutaneous heart valve.

**1990** - FDA 510K commercial authorization received for PolyCath™. Developed campaign to end use of latex balloons in hospitals.

**1990** - PolyCath™ rights sold to Nippon Zeon Co. of Japan for combination of investment plus pre-paid orders.

**1991** - Developed and patented first commercially successful endovascular stent graft the TALENT (Taheri-Leonhardt)™.

**1992** - Supplied patented balloon catheters to Cordis Corp., Nippon Zeon and C.R. Bard.

**1993** - Supplied patented balloon catheters to NASA.

**1994** - Developed and patented first stem cell delivery catheter - ProCell™.

**1995** - Developed and patented first electro magnetic radiation delivery catheter - RadiCath™.

**1995** - Developed and patented with Penn State the PENSIL™ intravascular lung catheter.

**1995** - Developed and patented vibrational energy devices for preventing blood clots and improving gas exchange.

**1995** - Completed world's first percutaneous repair of an aortic aneurysm in Australia with Dr. Ken Thomson.

**1997** - Signed letter of intent to merge WorldMed with Arterial Vascular Engineering of California.

**1998** - AVE World Medical Mfg. Corp. merger closes and Medtronic, Inc. in November announces acquisition of combined companies for \$3.7 billion in stock and \$600 million cash to cover AVE debt.

**1999** - Bioheart, Inc. formed first stem cell company for heart repair.

**1999** - Published in New England Journal of Medicine first paper of percutaneous repair of aortic dissections with Dr. C. Nienaber.

**1999** - Published in CIRCULATION first paper of successful bioelectric stimulation treatment of ischemia.

**1999** - Developed world's first biological pacemaker and completed successful dog study - BioPace™.

**2000** - Founded Leonhardt Vineyards in Sonoma County, California with purchase of first 15 acre property converted 50% to vineyards in Dry Creek Valley.

**2000** - Began filing series of over 13 patent applications for combination bioelectric and cell+growth factor therapies for organ regeneration.

**2001** - Introduced on U.S. market very first cardiovascular genetic test - Pla2 to determine heart attack risk.

**2001** - Completed world's first non-surgical stem cell repair of a human heart in The Netherlands.

**2003** - Published Phase I study muscle stem cell repair of hearts study in the Journal of the American College of Cardiology.

**2003 to 2009** - Bioheart, Inc. completed Phase I Myoheart, Phase II SEISMIC and Phase II/III MARVEL interim results studies. Gained first FDA authorization for combination cell + gene therapy trial REGEN = myoblasts + SDF-1.

**2005** - Bioheart, Inc. gains investments from Boston Scientific Guidant (\$2 million) and St. Jude Medical (\$2 million). Sells stem cell delivery catheter patent license to Abbott Laboratories (\$900,000). Closes collaborative clinical trial agreement with Cordis Johnson & Johnson.

**2008** - Completed \$76 million valuation IPO for Bioheart, Inc. on NASDAQ.

**2008** - Opened up research offices and lab in Southern

California and Northern California working with the University of Northern California School of Biomedical Engineering.

**2009** - Helped open up Science & Technology Innovation Center and Leonhardt's Launchpads NorCal at the University of Northern California School of Biomedical Engineering in Santa Rosa (UNC STIC). Enrolled first three startups in UNC STIC incubator program - Sapheon, Tissugen and Osseon. Sapheon was acquired by Medtronic Covidien in 2014 for \$238 million providing 63X return to seed stage investors.

**2010** - Published in European Heart Journal first repeat cell therapy injections study with Dr. F. Prosper in Spain.

**2011** - Published in American Heart Journal Phase II/III results Bioheart MyoCell - treated pts 95.7 meters improvement 6 minute walk. Placebo control minus 4 meters decline. 84% of treated pts improved. 16% worsened. 69% of control or placebo pts. worsened across all studies.

**2013** - Opened up Cal-X Stars Business Accelerator, Inc. DBA Leonhardt's Launchpads in Los Angeles area.

**2014** - Working with Wetling DK completed 47 patient microcurrent successful clinical study in Germany and Switzerland treating diabetic foot ulcers - published in International Wound Journal. 95% healing of all patients wounds at 8 weeks.

**2015** - Opened up Leonhardt's Launchpads Utah, Inc. in Salt Lake City, Utah near University of Utah campus.

**2015** - Launched the California Stock Exchange™ Cal-X 30 Social Good Impact Fund powered by Motif Investing.

**2015** - Launched The Kindheart Lionheart TV Network www.kindheartlionhearttv.com of curated inspirational and healthy living programming.

**2016** - Filed over 120 new provisional patent claims for organ regeneration technologies.

**2016** - Completed pilot sheep study for Stem Cell Bra in Argentina with successful results. 20% healthy tissue growth with only 1 hour of stimulation of 3 signals every other day for 4 weeks.



## Dr. Mark Cunningham

Board Director Leonhardt's Launchpads

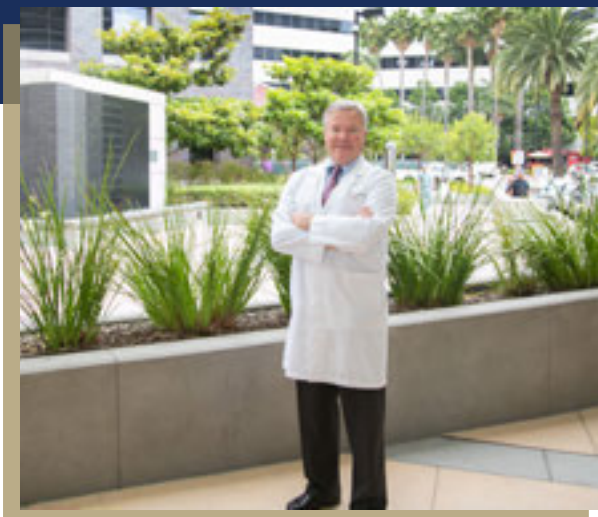
Senior Advisor Valvulator, Second Heart Assist, Inc, BioLeonhardt

Assistant Professor of Clinical Surgery University of Southern California Keck School of Medicine

Director of the Mechanical Circulatory Support Program, Surgical

*"I am truly excited to be actively involved with three projects with the Leonhardt team (1) Valvulator for heart valve decalcification and regeneration, (2) BioLeonhardt for heart regeneration and (3) Second Heart Assist a revolutionary circulatory assist pump. All three projects have potential to dramatically improve care of cardiothoracic patients."*

*"The Leonhardt-Donofrio invention of administering harmonic resonant vibration to prevent blood clot, plaque and calcification formation on implantable devices could be a breakthrough that is a desperately needed by patients. I look forward to being involved with the evaluation of this technology."*



## Experience

- NASA Langley Research Center, Space Directorate
- Aerospace Engineer 1982 - 1988
- Boston Medical Center, Boston University, Boston, MA
- General Surgery 1992-96
- Boston Medical Center, Boston University, Boston, MA
- General Surgery, Chief Resident 1996-97
- Keck School of Medicine at the University of Southern California
- Los Angeles, CA
- Cardiovascular Surgery 1997-2000
- Assistant Professor of Clinical Surgery
- University of Southern California,
- Keck School of Medicine
- Chief of Staff Keck Medical Center
- Director of the Mechanical Circulatory Support Program USC Keck Medical Center
- Surgical Director of the Heart Transplant Program USC Keck Medical Center

## Education

- Embry Riddle Aeronautical University, Daytona, FL 1984
- The College of William and Mary, Williamsburg, VA 1986
- George Washington University, Washington DC 1986
- Old Dominion University, Norfolk, VA 1986
- University of Miami School of Medicine, Miami, FL, 1992



## Alex Richardson

Board Director

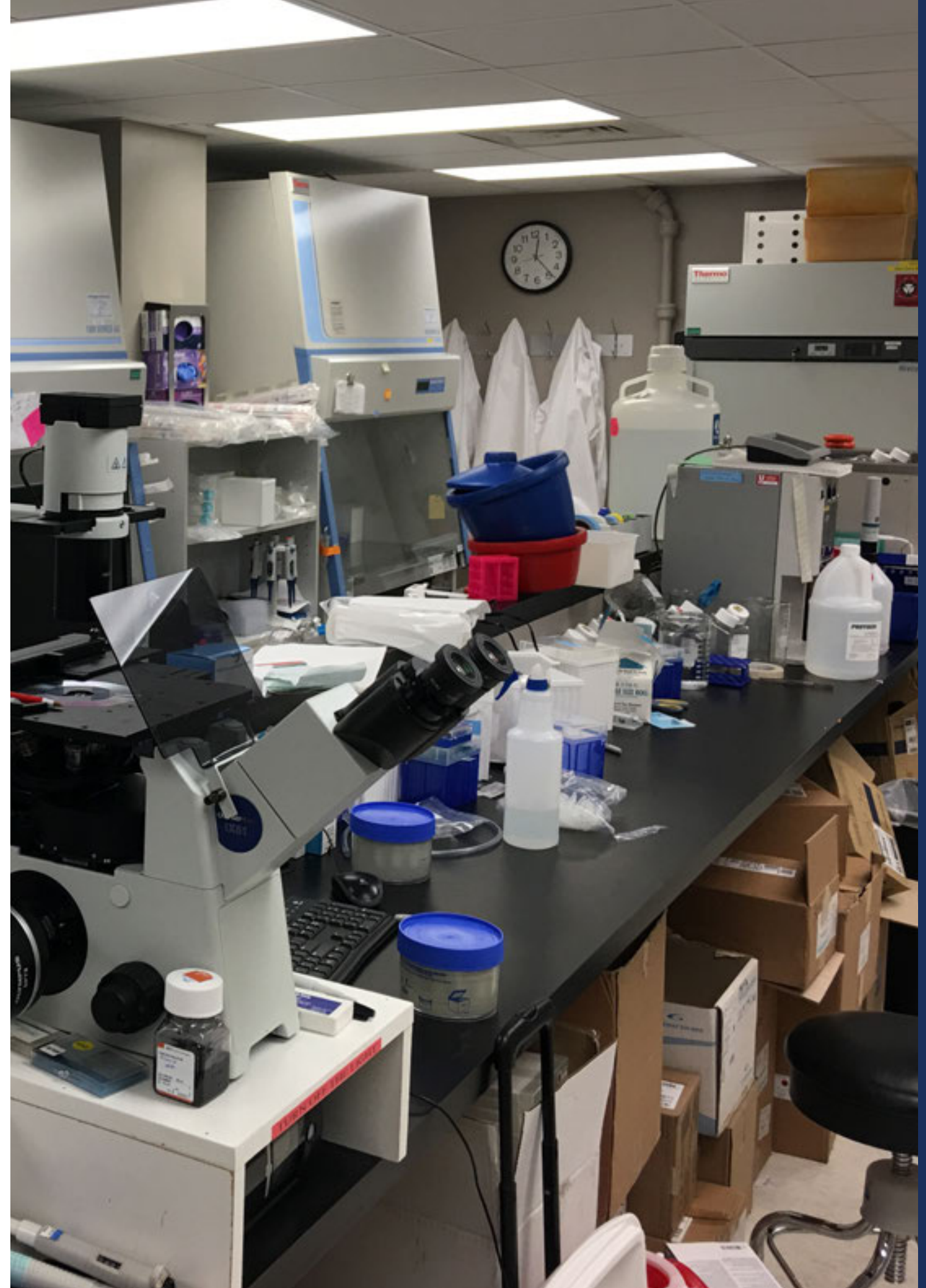
VP Engineering & Product Development



*"Our team has over 30 years experience manufacturing implantable pumps, sensors and stimulators. We have developed manufacturing and engineering partnerships with leading OEM service providers to get the maximum capabilities with the least amount of overhead. We are positioned for success forward with this foundation."*

### Background Experience

Alex S. Richardson, Former Founder of CORE Manufacturing, a medical electronics OEM engineering and manufacturing firm, has 30 years of experience in high-reliability manufacturing and design. Alex has spent the last 14 years supporting several Alfred Mann companies in the Los Angeles area and maintaining successful partnerships with other medical device entities such as Advanced Bionics, Biotronik, Boston Scientific, GE Medical, Medtronic, QIG Greatbatch, Fluid Synchrony LLC, Biomerics Advanced Catheter, St. Jude Medical and other world-class organizations.





## Jorge Genovese, MD, PhD

Vice President Bioelectric Research and Development

Leonhardt's Launchpads, BioLeonhardt, Stem Cell Bra, HairCell

*"Electrical stimulation induces dramatic changes in stem cell activity toward a clear regenerative phenotype. Exogenous electrical*

*currents activate and mobilize autologous stem cells in vitro and in vivo. Cell movement and cell positioning are important components of regeneration and the right bioelectric signals can get regenerative repair cells to where they need to be. Bioelectric signals can turn up or turn off proliferation. They can cause new blood vessels to grow or can suddenly halt blood supply, as may be needed in the case of starving cancer tumors. Certain bioelectric signals can even affect cell elimination through programmed cell death. Experiments have proven the ability of bioelectric stimulation to induce or augment regeneration, which is our area of greatest research interest."*

## Background & Experience

- Dr. Genovese obtained his M.D. and Ph.D. from Buenos Aires University
- Faculty member of the McGowan Institute for Regenerative Medicine at the University of Pittsburgh, where he was the Principal Investigator at the Center for Cardiac Cell Therapy and the Cardiac and Molecular Biology Laboratory
- **He was Director of the Cardiac Regenerative Medicine Laboratory at the Cardiac Surgery Division, University of Utah**
- Dr. Genovese was also Invited Cardiac Surgery Professor at Campus Biomedico University in Rome
- Dr. Genovese has been very active in the Tissue Engineering International & Regenerative Medicine Society (TERMIS), chairing numerous committees and serving a term as Vice President
- He is Editor of the Journal of Stem Cells, Associated Editor of the Frontiers in Stem Cells Journal, member of the Editorial Committee of the World Journal of Stem Cells
- Member of the North American Veterinary Regenerative Medicine Association
- President Hearten Biotech. Vice President Bioelectric Research & Development BioLeonhardt
- Dr. Genovese is a pioneer of Tissue Engineering in Latin America, being the first in the region to generate keratinocytes cultures in 1985, an organotípico dermoepidemic device in 1998, and a genetic modified dermo-epidemic device in 2002, among many other tissues





## Laurelle F. Johnson

President, BladderCell

Board Director Leonhardt's Launchpads

*"I joined the Bladder Cell Team to aid the over 30 million women in the USA who live with urinary incontinence. The condition also reduces the quality of life for wheelchair-bound patients with spinal cord injuries,*

*Multiple Sclerosis and Muscular Dystrophy. Our team is committed to develop and find a solution."*

### Background, Education & Experience

- MBA Pepperdine University
- Bachelors Degree Speech Communications  
California State University Northridge
- Founding Member - Women in LAVA - Los Angeles  
Venture Capital Association, promoting access to  
venture capital for women owned startups
- Co-Founder MyExpat.US
- Creative President - Strategies for Growth
- Helped startups raise more than \$40 million since 2009



## Dr. John Marchetto

Chief Medical Officer &  
President

OrthodontiCell

*"We believe we are on the brink of definitely proving that we can reduce brace and aligner wearing time from 18 months to 6 months. In addition to that we*

*have demonstrated with our proprietary bioelectric signals we can increase OPG release more than 1000%. OPG has been proven in previous studies to help stabilize teeth positions so they stay straight after alignment."*





## Ben Boytor

President, LiverCell

Advisor Biomedical Engineering & Biology Leonhardt's Launchpads

*"The liver is the most important metabolic organ in the body and crucial for optimal health. There are over 100 different types of liver diseases which combined are a leading cause of death globally. However, relatively little is*

*known about these diseases compared with other chronic conditions. Many of these diseases have few or no approved treatments available and mortality rates are expected to continue to increase until new treatments are discovered.*

*To address the unmet needs of patients worldwide we are developing a potent treatment solution for reversing the affects of liver disease through liver regeneration. Our approach utilizes bioelectric stimulation + a micro infusion pump + the LC-15 fifteen component cell-based composition.*

*Bioelectric stimulation controls stem cell homing, proliferation and differentiation as well as controlled release of more than a dozen regeneration promoting growth factors. Our micro infusion pump provides repeat deliveries of the LC-15 composition of stem cells, growth factors (including amniotic fluid), exosomes, micron RNAs, nutrient hydrogel, anti-inflammatory agents and selected alkaloids that we believe are necessary to fully regenerate a failing liver. We are excited about the enormous potential of our technology and are moving forward with carefully designed studies to prove this out."*

## Education

- Master of Science Biomedical Engineering - Florida International University 2001 to 2003
- Bachelor of Arts Pre-Med Biology - Augustana College 1994 to 1998

## Background & Experience

- Director of Quality - BD Technologies and Innovation
- Quality Leader - BD Diagnostics
- Director of Quality Control - Cytonet
- Senior Quality Engineer - Bioheart, Inc. a Leonhardt Ventures co. (heart regeneration muscle stem cells)
  - Helped guide Bioheart (A Leonhardt founded company) muscle stem cell based heart regeneration therapies through Pilot, Phase I, Phase II and Phase II/III clinical trials at over 40 leading centers worldwide(33 in the USA) and helped gain first ever FDA clearance for clinical trials for a combination cell and gene (SDF-1) therapy for heart regeneration.
- Research Associate University of Miami - Molecular and Immunology Department







## Dr. William T. Abraham

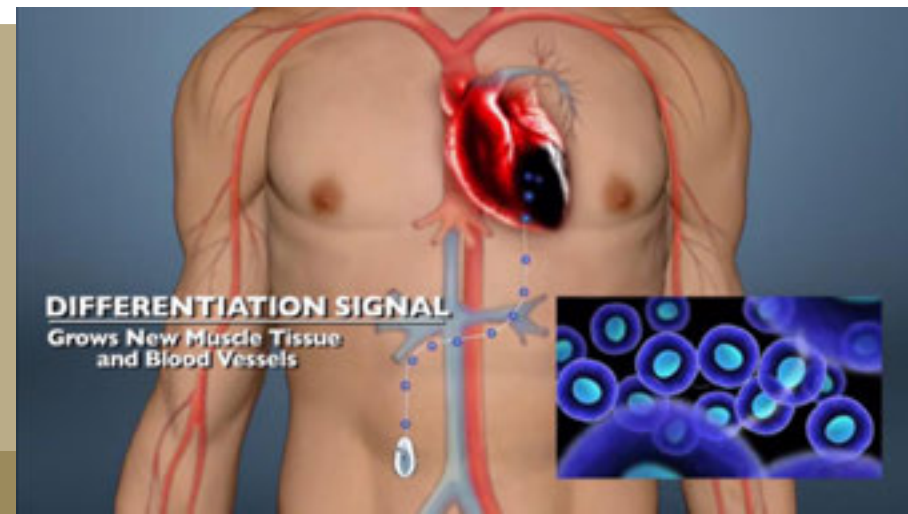
Chairman Scientific Advisory Board

Director Division Cardiovascular  
Medicine, Ohio State University

*"The Leonhardt team has had the endurance to spend the time and effort to get heart regeneration right with their BioLeonhardt platform.*

*Their Second Heart Assist device to*

*relieve the heart of workload during bioelectric and stem cell based regeneration and to improve renal output has a real place in heart failure treatment. I look forward to being involved with the clinical evaluation of both these products."*



## Background & Experience

- Professor of Medicine, Physiology, and Cell Biology  
Chair of Excellence in Cardiovascular Medicine
- Director, Division of Cardiovascular Medicine
- Associate Dean for Clinical Research
- Director, Clinical Trials Management Office
- Deputy Director, Davis Heart and Lung Research Institute

## Education & Postdoctoral Training

- University of Pittsburgh, Pittsburgh, Pennsylvania
- B.A. Magna Cum Laude with Departmental Honors  
in Philosophy received April 21, 1982
- Harvard Medical School, Boston, Massachusetts
- M.D. received June 5, 1986
- University of Colorado Health Sciences Center, Denver, Colorado
- Intern in Medicine, 1986-1987
- Resident in Medicine, 1987-1989
- Chief Medical Resident, 1989-1990
- Fellow in Cardiology, 1990-1993
- Heart Failure/Cardiac Transplantation Fellow, 1991-1992
- Research Fellow in Cardiology, 1992-1993
- University of Utah Affiliated Hospitals, Salt Lake City, Utah
- Visiting Fellow in Heart Failure/Cardiac Transplantation, April-June 1991



## Dr. Nicolas Chronos

Chief Advisor Product Development

Leonhardt's Launchpads, Second Heart Assist, Inc, BioLeonhardt, PancreaCell

*"I have been working with the Leonhardt team in developing and evaluating regeneration and recovery technologies for 17 years. No other group has put as much*

*effort into understanding all the mechanisms of regenerating diseased organs. The combination of bioelectric stimulation, a refillable micro infusion pump and a multi-component stem cell based mixed composition makes sense. We are now on the final leg of applying everything we have learned into a vibrant platform for organ recovery."*



## Background & Experience

- Dr. Nicolas Chronos is an interventional cardiologist well known for his pioneering research in the treatment of heart disease.
- Dr. Chronos received a Bachelor's degree in medicine and surgery from the Royal Free Hospital School of Medicine at the University of London in 1987.
- Trained in cardiology and interventional cardiology at the Royal Brompton National Heart and Lung Institute in London.
- In 1992, Dr. Chronos was awarded a British Heart Foundation International Fellowship and moved to the United States to continue his research in interventional cardiology at Emory University School of Medicine.
- Director of Research at the Andreas Gruentzig Cardiovascular Center at Emory University Hospital in 1997.
- Dr. Chronos joined Atlanta Cardiology Group in 1999 where he developed and served as CEO of the Saint Joseph's Translational Research Institute until 2012.
- Formed Cardiology Care Clinics
- Dr. Chronos has held academic appointments at Duke University
- Currently on the faculty of Stanford University as a consulting professor of medicine and cardiology.
- Most recently, he established Cardiology Care Clinic at Lake Oconee in 2012 with his wife and cardiology physician's assistant, Heather Chronos.
- Dr. Chronos is a Fellow of the American College of Cardiology, the European Society of Cardiology and the Royal College of Physicians of London.
- He has published several books and more than 200 peer-reviewed articles.
- Adjunct faculty at Stanford until 2016



## Dr. Stuart Williams

Vice President of Cardiovascular Research

Leonhardt's Launchpads, BioLeonhardt, VascuStim (formerly MyoStim Peripheral), EndoCell, President and Co-Founder - MucosaCell

*"I have been working with the Leonhardt team since the mid 1990's when we began cell seeding*

*stent grafts. We have come a long way since then and have learned how to support organ regeneration with not only stem cells but also growth factors, nutrient hydrogels, scaffoldings, matrixes, exosomes, micro RNAs, 3D printing and bioelectric stimulation. It is a delight to see all of this coming together now into a comprehensive therapeutic option."*

## Background & Experience

- Dr. Stuart Williams received his Ph.D. in Cell Biology from the University of Delaware
- Postdoctoral training in Pathology at the Yale School of Medicine.
- During the period 1980 to 1990 he held a faculty appointment at Jefferson Medical College where he was Director of Research in the Department of Surgery.
- In 1990 Dr. Williams joined the faculty at the University of Arizona and founded the University of Arizona Biomedical Engineering Program creating a research and educational link between the Medical School and College of Engineering. He held faculty positions jointly in Biomedical Engineering, Surgery, Physiology and Materials Science and Engineering.
- In 2007 Dr. Williams was selected as the Scientific Director of the newly established Cardiovascular Innovation Institute, a partnership between Jewish Hospital and the University of Louisville in Louisville Kentucky.
- Established the Bioficial Organs Program to create human tissues and organs for clinical therapeutics and in vitro drug testing using a patient's own cells. Central to this effort is the use of 3D bioprinting technologies.
- Dr. Williams' research interests have focused on medical devices and regenerative medicine. He developed and patented the first methods to use fat-derived stem and regenerative cells for therapeutic use.
- Dr. Williams has authored over 400 scientific publications including scientific papers, abstracts, book chapters and editorials.
- His entrepreneurial spirit has resulted in 22 issued US patents with numerous patents pending.
- He has founded several biotechnology companies; maintained active managerial positions and has been an active consultant to the medical device, regenerative medicine and pharmaceutical community.
- He is a Fellow of the American Heart Association and a Fellow of the American Institute of Medical and Biological Engineering.





## Dr. Nicolas Peters

Chief Clinical Advisor, BioPace

Faculty of Medicine, National Heart & Lung Institute

Professor of Cardiac Electrophysiology

Imperial College London

*"Most of us have natural pacemakers made of living cells that work very well to keep our heart on beat 24 hours a day 7 days a week and adjust naturally to changing work*

*demands. We are on a path at BioPace to develop this same natural technology for patients currently receiving steel cans, steel leads and electronic bulky hardware implants powered by batteries. Just as very few of you with good natural pacemakers would trade yours in for battery powered steel can, we believe the same will be true for patients and their care physicians in the future choosing instead a natural pacemaker made of living cells alternative."*

## Background & Experience

Dr. Nicholas Peters Expanded Bio - Professor of Cardiology and Head of Cardiac Electrophysiology, Imperial College London, and Consultant Cardiologist at Imperial College Healthcare NHS Trust (St Mary's Hospital). His other appointments include Adjunct Professor, Department of Pharmacology, Columbia University, New York and Co-Director EP Research, St Joseph's Cardiovascular Research Institute in Atlanta. He is on the Board of Trustees, The Founding Research Committee, and Board Liaison for Research of Heart Rhythm Society, USA. Professor Peters is also director of the ElectroCardioMaths Programme.

He is a Clinical Academic, performing ablation and device-implant procedures in the management of arrhythmias, forming the basis of the clinical component of the program of research into myocardial conduction ranging from sub-cellular morphological determinants of cell-cell coupling, to conduction properties of human myocardium in health and disease, and funded principally by the British Heart Foundation. He has more than 100 peer-reviewed papers and holds patents in the field. He has a number of international research collaborations, is on the Scientific and Medical Advisory Boards and is Consultant to a number of academic, publishing and commercial entities in Europe and the USA and is co-founder of the European Cardiac Arrhythmia Society and Symphony Medical, Inc.



## Devin Thope

Senior Advisor

The California Stock Exchange™ & Leonhardt's Launchpads Utah, Inc.

*"Studies show that consumers will not only choose socially responsible products over less socially responsible ones, they will pay a premium. There are two*

*primary reasons to become a social good impact company. First, doing good is an obligation we share. The second reason is that when done well, your company will increase profits. Because of our belief that these two reasons harmonize; that doing good increases profit and ROI, we created The California Stock Exchange™. Having as our long term goal to establish a full fledged stock exchange based on these principles."*



## Anthony "Tony" Cronin

President Programming, Producer

Kindheart Lionheart TV Network

*"Disney bought Makers Studio an upstart online TV network for \$1 billion. Our network is specializing in reaching a specific demographic which seeks to be inspired to live healthier, more active, love and*

*compassion filled lives with better relationships. This focus is just what many advertisers seek to reach. We believe our original content is highly appealing and will draw in a growing audience of viewers and keep them engaged."*

### Experience

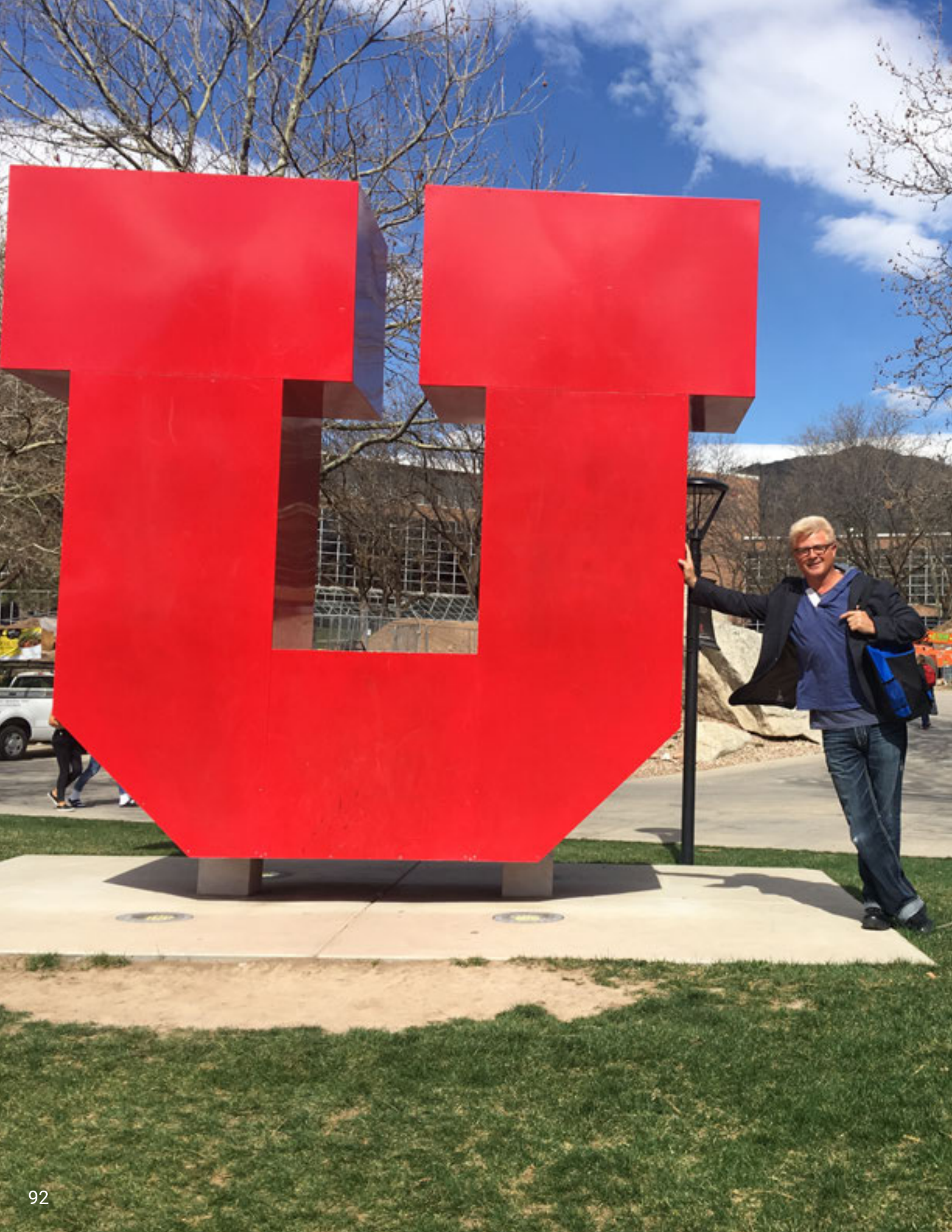
Anthony (Tony) F. Cronin is a writer, director, actor, and musician based in Santa Monica, California.

- Colgate University Theater - Technical Director University Theater.
- Masters Program Arizona State University.
- Cornell University Master of Fine Arts in Directing Theater Program.
- Artistic Director Cornell University Summer Shakespeare Festival.
- Administrator and Teacher Gene Frankel Theater and Film Workshop Greenwich Village, NY.
- Wrote and produced numerous plays.
- Novel writer - The Twisted.



# Leonhardt Ventures Management Principles Since **1982**

1. We are committed to **World Class consistent quality** in our products and services.
2. **LUCK FAVORS THE PERSISTENT.** This simple truth is a fundamental cornerstone of successful company building.
3. **Monday through Friday is one quick blurred together workday.** Saturday and Sunday are two long rest days. Saturday is for reading. We never work Sundays.
4. Our success depends on our ability to **quickly bring to bear the talents of people** and bits of organizations **dispersed around the globe.** Positive spirit and communication are the keys.
5. Speed and agility are two of our most important strategic assets. We cannot be weighed down with large overhead and bureaucracy. We have flexibility to adjust quickly to changing market needs and **to shift resources and focus to what really needs to get done at any particular time.**
6. We believe in **continuous improvement.** Never is something perfect right from the beginning. We improve our products and our organization a little bit everyday. We use feedback from the “real world” market to drive improvement. We WORK at improvement.
7. We operate **lean with a small flexible staff focused on customers and products. WE DO MORE WITH LESS!** We reduce wasted time. We are bootstrappers stretching every dollar out.
8. We believe in gaining **widespread feedback** on new designs early in the development process. Lots of prototypes, lots of tries, evaluated comprehensively. Innovation is work!
9. **No internal functional barriers.** We want **everyone involved** in doing what needs to get done when it needs to get done.
10. Work simplification. **Do not over complicate tasks. Get to the heart of the matter and get it done NOW. Keep things simple.**
11. We are committed to developing export sales to the 96% of the world’s population that lives outside of the U.S.A. **Profits from export sales fuel R&D and U.S. clinical trials.**
12. We believe **superior customer service and responsiveness are critical** to sustaining our success. Employees that exhibit the attitude “This would be a great business if it weren’t for the damn customers and their irritating demands,” must be corrected to the awareness that our customers pay our bills. **The only people called “boss” in our organization are the customers.**
13. We believe **continuous organizational learning is a key asset of our company.** We read everything we can get our hands on! We uncover every stone. We hunger for knowledge. **We take in information at rapid rates like drinking water from a fire hose. We all learn to speed read.**
14. **Networking** with others **allows us to develop and get our products to market more quickly.**
15. We are passionate and compassionate about what we are doing. **We care! We believe in what we are doing!**
16. **Every member is a co-stakeholder in the business.**
17. Work should be made fun at times to relieve tension. **You must have fun, that’s an order. :)**
18. **Weekly responsibilities and goals are clearly defined** in our Monday Morning Meetings.
19. We have a **bias for speed and action.** Analysis and reflection are all well and good, but we are nowhere without **implementation** - and it had better be fast and right.
20. Our work environment is one of **honesty, integrity and mutual respect.**
21. We **focus** on developing best in class breakthrough technologies in organ regeneration and recovery.
22. Our regenerative economy portfolio companies are designed to feed funds to our organ regeneration and recovery research efforts.
23. We believe “if you want **to be original the most important thing you can possibly do is DO A LOT OF WORK, create a large volume of work.**” - Ira Glass. Breakthrough innovations are the by-product of volume of work. In innovation, lots of shots on goal equals more goals.



The logo for CalXStars.com features a red star with a white outline, followed by the text 'CalXStars.com' in a bold, black, sans-serif font.



Leonhardt's Launchpads by Cal-X Stars, 2000 Main Street, Unit 333, Santa Monica, CA 90405  
- [www.leonhardtventures.com](http://www.leonhardtventures.com) + [www.calxstars.com](http://www.calxstars.com) ;

Leonhardt's Launchpads Utah, Inc. 370 S, 300 E, Salt Lake City, UT 84111  
Research Lab @ 2500 S State St. #224, Salt Lake City, UT 84115

