



## NEWS RELEASE

FOR IMMEDIATE RELEASE  
December 5, 2018 1:30 PM EST

### **Space Tango Announces Launch of LambdaVision Retinal Implant Manufacturing Payload on SpaceX CRS-16**

Partnership to Evaluate Autonomous Retinal Implant Manufacturing in Microgravity onboard International Space Station

**CAPE CANAVERAL, Fla. (DECEMBER 5, 2018)** - [Space Tango, Inc.](#) launched its initial mission with LambdaVision, Inc. to evaluate protein-based retinal implant production on orbit on the SpaceX Commercial Resupply Services-16 (CRS-16) mission from Cape Canaveral Florida at approximately 1:16 PM EST this afternoon. This partnership seeks to improve the quality of protein-based retinal implants designed to address the unmet needs of patients blinded by retinal degenerative diseases, such as retinitis pigmentosa (RP) and age-related macular degeneration (AMD).

The global incidence of blindness due to retinal degenerative diseases, including RP and AMD, is increasing at a significant rate due to a rise in average lifespan and an expansion of the global geriatric population. Blindness from these diseases can cause a significant decline in the quality of life for affected patients. In addition to the physical and emotional burden of vision loss, the cost of vision problems in the US is estimated at \$139B. To date, no cure exists for patients with RP or AMD, and there are only a limited number of treatments available.

Current protein-based retinal implants developed by LambdaVision consist of a flexible, implantable device powered by incident light that does not require any external power supplies or additional hardware on or outside the eye. The technology offers the potential for far greater resolution than competing electrode-based technologies.

“We are excited about the opportunity to work with Space Tango to evaluate an innovative approach to manufacturing our retinal prosthesis for restoring vision for patients”, said Dr. Nicole Wagner, President and CEO of LambdaVision. “Our commercialization strategy is to first target patients with RP, which is an orphan disease designated by the National Organization for Rare Disorders (NORD). Consequently, this research and development initiative represents an advantageous and strategic test platform to produce pilot-scale implantable products for a small clinical trial patient pool. Once validated, the outcomes of this collaboration can pave the way for subsequent commercial production of the retinal prosthetic technology, as well as future drug, device, or combination implantable product manufacturing in microgravity.”

The LambdaVision retinal implant is comprised of multiple layers of oriented bacteriorhodopsin on a flexible, ion-permeable membrane, which is achieved by layer-by-layer electrostatic adsorption. Because uniform orientation and layer homogeneity of the multilayered implant is a critical component to achieving superior resolution and long-term performance, LambdaVision is proposing to leverage the unique properties of microgravity that allow more uniform and consistent incorporation of the protein onto an ion-permeable membrane.

“We are very pleased to be working with LambdaVision on this important project that has the opportunity to provide benefit to patients here on Earth,” said Twyman Clements, Co-founder and CEO of Space Tango. “The improved microgravity manufacturing paradigms have the potential to increase the stability, activity, and optical quality of the prostheses, reduce the amount of raw materials needed for assembly, and accelerate production of the devices for further preclinical and clinical testing. Once validated, the enhanced layer-by-layer manufacturing process has the potential to lead to an improvement in homogeneity, orientation, and stability of multilayered thin films for broad applications, including the design of photovoltaic cells, chemical sensors, and optical memories and processors. Efficient ordering and packing of biomaterials affect many vital areas of research and manufacturing, and this study will be of interest to scientists and industries whose technologies depend on similar constructs across both the technology and biomedical sector.”

Accompanying LambdaVision’s investigation to the ISS are payloads from Anheuser-Busch, a winning project for the CASIS Marvel Guardians of the Galaxy Challenge, Space Tango’s Powered Ascent Utility Locker (PAUL), and several academic and STEM payloads from Higher Orbits, the Craft Academy, Magnitude.io, and the International Space School Education Trust (ISSET). For more details on these payloads, visit <https://spacetango.com/whats-flying-a-look-at-space-tango-crs-16-payloads/>.

### **About Space Tango**

Space Tango provides improved access to microgravity through their Open Orbit platform for research and commercial manufacturing applications that benefit life on Earth. The Company believes the microgravity environment is a new frontier for discovery and innovation. Space Tango is focused on creating a new global market 250 miles up in low Earth orbit and envisions a future where the next important breakthroughs in both healthcare and technology will occur off the planet. Recognized for their expertise in microgravity design and operations, Space Tango believes that by exploring with industry and educational partners of all kinds, we can improve life on Earth and inspire the next generation to continue to expand the horizon of this new frontier. For more information, visit [www.spacetango.com](http://www.spacetango.com).

### **About LambdaVision**

LambdaVision is developing a high-resolution, protein-based retinal implant to restore vision to the millions of patients blinded by retinal degenerative diseases, including age-related macular degeneration (AMD) and retinitis pigmentosa (RP). The patent-protected retinal implant technology developed by LambdaVision uses the light-activated protein, bacteriorhodopsin, to replace the function of the damaged photoreceptor cells. Because current treatments of RP and AMD only slow disease progression, LambdaVision is dedicated to creating a retinal prosthesis that is capable of restoring functional vision and enhancing the quality of life for those afflicted by retinal degeneration. LambdaVision was founded at the

University of Connecticut in 2009 by Dr. Robert R. Birge, Distinguished Professor of Chemistry. For more information, visit [www.lambdavisioin.com](http://www.lambdavisioin.com).

# # #

**Contact:**

Danielle Rosales

[press@spacetango.com](mailto:press@spacetango.com)

650.837.0332