

## **Arthur Zwern Bio - February 10, 2019**

As a child, Arthur was fascinated with science, invention and ecology. He graduated at the top of his class in Applied Physics at Georgia Tech, including an internship at NASA/Jet Propulsion Laboratory where he performed experimental research in the field of micro-gravity acoustic levitation.

Graduating in the era before the personal computer, the only tech jobs available were in Defense. His first job at Hughes Aircraft Company required him to look thirty years into the future and invent electro-optical devices that leapt from the pages of science fiction - then prove that they could be done. Arthur conceived and implemented the nation's most advanced infrared laser test facility and coordinated its operations. He also conceived and system-engineered future drone systems, virtual/augmented reality systems, laser sensors, infrared camera improvements, and other electro-optical systems advances.

"I got to dream up really cool sci-fi fantasies and then prove the physics worked so it was only a matter of time before the technology was sufficiently developed to field them - this was a decade before most people even heard of such things."

He was accepted into Harvard Business School and left his job and scholarship offers in California for New England. While at HBS he consulted for McKinsey & Company, and presented findings about business opportunities in space to the NASA Administrator and the President's Science Advisor. This work led to helping form Chryschem, an early intelligent drug design company.

After HBS, Arthur held various management positions in engineering, manufacturing, and marketing at KLA Instruments (now KLA Tencor), the world's leading automated visual inspection supplier, where he helped transform capital equipment production to just-in-time processes, and advance automated statistical visual control loops around semiconductor production steps.

Then Arthur entered the world of startups and breakthrough ventures. His first start-up Voice Innovation applied his understanding of electronic countermeasures to car alarms, where his user-programmable voice warning devices won an Innovation Award at the Consumer Electronics Show.

He then discovered that the Defense Department supported small businesses that created innovative research and development projects with both defense and commercial applications.

This became a funding source for multiple start-ups and inventions in the overlapping fields of computer vision, virtual reality, 3D graphics, and drones. His venture General Reality Company offered the first full line of virtual reality peripherals from head-mounted displays to datagloves in the mid-1990s, and developed the first virtual conferencing system for military command posts, while his Virtual Computer Monitor for visually impaired computer access won an Innovation of the Year Award at the Virtual Reality and Disabilities Conference. His venture Geometrix focused on acquiring 3D graphics from images, leading to the first integrated navigational system for drones, the first commercial passive 3D scanner, the first automated prescription eyewear virtual try-on and production control system, and multiple other innovations resulting in patents and awards.

After 9/11, Arthur's focus became Homeland Security. The Geometrix 3D face-capture system conceived for animation and games was immediately applied to biometrics, becoming the most precise biometric facial-recognition system ever tested by the US government in 2003. His team of scientists and engineers also deployed the first integrated biometric access control solutions, combining facial and fingerprint identification within an adaptive predictive algorithm. For a time, the company's facial recognition solutions captured more wanted criminals than the entire TSA.

After accepting an invitation to the annual festival Burning Man in 2003, Arthur became engaged in interactive and industrial art which was a change from the traditional art experience of his childhood or the high-tech advances of his career. During the festival he was inspired to create

art and live a lifestyle far from mass consumption. “I immediately came home and told my wife we’re throwing away the TVs because there’s nothing interesting enough on TV compared to the things we can create in real life - and we did.”

Arthur also virally popularized a new industrial art medium at Burning Man and other festivals called “Playatech” that uses plywood to construct unique tab and slot furniture and other structures without the use of fasteners. This led to another award-winning start-up company HOMERgent, which pioneered self-sufficient portable, off-grid, flat-pack rapid sheltering solutions for disaster relief and the homeless. These projects follow free and open source models with all proceeds benefiting the arts in the case of Playatech. He plans to further develop fully-furnished “nano-homes” for poverty-stricken communities.

After first visiting Costa Rica in 2014, Arthur reawakened his interest in the environment, recalling his first ecology class in elementary school that began his evolution into a physicist. His perspective on the problems facing the environment is about applying scientific solutions, to manage energy flows and natural processes like waste recycling. His foray from green and sustainable development into regenerative development, the next level of global environmental crisis-control, also uses a cultural and holistic approach in its design.

As a father with two teenagers, Arthur began to look at his legacy and was emboldened to leave a better world. He is now more determined to use his knowledge and experience in every aspect of his life, from recycling at home to creating regenerative design projects in Costa Rica. He chose Costa Rica because of its environmental agenda and focus on renewable energy sources as well as its reputation for peace.

Casa de Luz is a beachfront luxury villa converted into a solar home, the first in Tamarindo that houses guests from around the world. Turtles First is an eco-activism destination and conservation program in development that protects endangered species such as the Leatherback Turtle and surrounding flora and fauna in Playa Grande. Quepos Cloud, near Manuel Antonio, is a complex being planned to integrate permaculture farming, residential

retirement, cultural & wellness activities, and tourism, within a fully regenerative environment.

“I seek new paradigms and business models that align human nature with Mother Nature for lasting mutual benefit that lives beyond me. They say ‘the best way to predict the future is to invent it’ so I do. I am following my passion and invite everyone to join me on this adventure.” - Arthur Zwern

Arthur continues his vocation as an award-winning inventor, high-tech entrepreneur, real estate investor, woodworker, vocalist, humanitarian, and patron of the arts. He spends his time between California and Costa Rica with his amazing wife of 20 years, two teenagers too good to describe, and a crazy dog and cat that chase each other.