

Larry Wan

I graduated with highest honors from Yale University with BS (1960), MS (1961), and Ph.D. (1966) in engineering and applied sciences. I have been a successful entrepreneur and founder of a number of high tech companies. However, my pride and passion is being a naturalist and long time conservationist.

In fact, I was born an environmentalist. Let me explain. I was born in China at the beginning of the Second World War, My father, a Yale Ph.D. was a professor at the Yale chapter in China. To escape the Japanese invasion, a group of faculty and their students migrated from central China, while conducting classes along the road in an epic documented journey to the Burma border. My parents were the only ones with a child. So during my formative years from a few months old until seven years of age when my father returned and brought his family to the US, I was totally without other children to play with. Instead, my play mates were the chirping, howling, fluttering, and crawling creatures of the jungle. From them, I learned about life with a capital L. To this day I love and will defend any creature whether it has scales, feathers, fur or chlorophyll as a brother or sister. Through my childhood's intimate and uninhibited kinship with other species, I developed a deep reverence for Nature. This is the root of my life long environmental activism. It is the foundation of my philosophical engagement to engender in my fellow humans, this profound sense of connectivity, dependence, thanksgiving and commitment to Nature. I was born a conservationist.

As a student at Yale, the university president called me the "natural philosopher and unpaid faculty" because I conducted well attended informal seminars to inspire and invigorate my classmates to feel that we have a moral imperative and a practical responsibility to protect and hold sacred our Earth's life support system and thus all its living things. One day after a math class on Fourier Transforms, I immediately expounded to the other students that this remarkable mathematician and scientist has given us the mathematical formulation and validation that human activity can induce global warming. Remember this was back in the 1950's when few talked about or even thought about global warming.

After graduate school, I was recruited in 1962 by the University of California Board of Regents along with two of my Yale professors to found and establish the engineering school at UC Santa Barbara. This gave me the opportunity to teach engineering students that if they want to be inventors and designers, they should look to Nature because there is no basis of any good human invention that has not already been evolved by Nature. Plagiarize nature and you will come up with a good patent. Nature does not even demand a royalty so one must protect and conserve this enormous free public library of blue prints and formulas of immeasurable economic value. I emphasized to my students that this is true for the arts as well because Nature is a museum of the most inspiring canvases of beauty and sculptured forms.

Putting my lectures to practice, I entered the industrial world and founded a number of technical companies while generating a large number of patents with inventions derived from borrowing ideas from Nature. For example I patented micro mechanical vibrating elements fabricated in silicon the size of the diameter of a human hair. These devices served as gyroscopic stabilizers for cameras, cars and satellites. The basis in Nature for the patents are that flying insects have microscopic hairs along their abdomen or hind legs that vibrate in one plane. Attached to nerve endings, conservation of angular momentum induced out of plane vibrations when the body rolls are sensed allowing the insect to adjust and stabilize its flight.

Another patent is for a “lab on a chip” consisting of small wells on a silicon microchip. Each well contains a specific allergen such as pollen, animal dandruff, smoke particle, etc. Each well is connected by micro-channels to a single entry port for introducing a drop of blood. Blood is moved through the channels to the wells and an allergic reaction can be detected. This eliminates the tedious and risky skin test by a do it yourself test strip similar to a pregnancy test kit. The trick is to move such a small quantity of blood through each channel without a battery powered pump and quickly before the blood coagulates. Well, how does a red wood tree move fluids from its roots against gravity up several hundred feet to the top leaf? Each micro-channel is thus coated with the similar hydrophilic materials that generates the capillary action in the tree.

Companies that I founded to develop and market these designs included Sycam (software) , Sitek (sensors) , Neovasis (cardiovascular devices), Biomems (biomedical devices), BEI Medical (gynecological devices) and Opticnet (telecommunications). These companies may not be household names or traded on wall street but the products we produced based on plagiarizing Nature’s blue prints were critical components to products of companies like General Motors, Boston Scientific, Raytheon, Delta Airlines, Boeing, etc.

Our gyro stabilizers kept the lenses of the Hubbell Telescope steady and navigated the Rover on Mars. I always mentored our young engineers to look at Nature for new product ideas and never failed to point out that with all the billions of dollars spent on space and astronomical exploration, it has taught us but one thing that we are blessed to be on the only known living planet. The creatures that were my childhood companions may be the only companions we, our children and our children’s children will ever have in a vast and lonely universe.

A few years ago I also gave a lecture at the University of Southern California Business School on the business model of capitalizing on Nature’s designs with examples of my own experiences.

When I retired from my last business endeavor, Opticnet, in fiber optic telecommunications, I happily became a full time conservationist. I returned some of my earnings from business back to Nature by founding a conservancy, the Western Alliance for Nature to protect and rescue vanishing critical habitats for wildlife.

In Southern California, the Western Alliance for Nature has partnered with the Sierra Club on protecting the Least Terns and Western Snowy Plovers at Ormond Beach.; supported the UC Santa Barbara Coal Oil Point Snowy Plover program, and funded the Bolsa Chica Land Trust and the Amigos de Bolsa Chica in protecting Orange County's major remaining wetland.

Focusing on threatened habitats of global ecological significance, we have partnered with the World Land Trust in acquiring thousands of acres to establish neo-tropical preserves along the slopes of the Andes and partnered with the Northern Jaguar Project to establish a several thousand acre preserve in the foot hills of the Sierra Madre to protect the jaguars just south of our border. Moving up the Pacific Flyway we are planning to support Audubon Alaska in their valiant efforts to oppose oil drilling in the Arctic.

At this very moment, my conservancy is sponsoring and has organized 16 rallies, one in every coastal county of California (two in San Mateo County) to oppose the IWC proposal to legalize commercial whaling. These rallies are to be held on Sunday, May 23rd and include, depending on the County, live music, children's action stations, banners, Polynesian dancers, a Chumash ceremony, free T-shirts, whale costume contests, forming a human whale on the beach and of course numerous speakers. Speakers include elected officials, authors, representatives from a large number of environmental groups and the California Coastal Commission.

In addition to my own conservancy, I have served and am serving on the boards of a number of environmental organizations including, California League of Conservation Voters, Vote the Coast, Organization of Regional Coastal Activists (ORCA), Audubon California, WildCoast and Urban Wildlands.

I complement my conservation work with nature photography that is dedicated to raising public awareness of the magnificence, power, beauty and wonder of Nature and to inspire environmental protection and wildlife conservation. My work has been exhibited in galleries and shows and has been published in Birder's World, American Bird Conservancy, World Bird Watch, Audubon Society, Sierra Club, California Coast and Ocean, Bio-Science, Amicus-NRDC, numerous nature websites and several articles in scientific journals. Proceeds from sales of my photos are always donated to environmental organizations.