

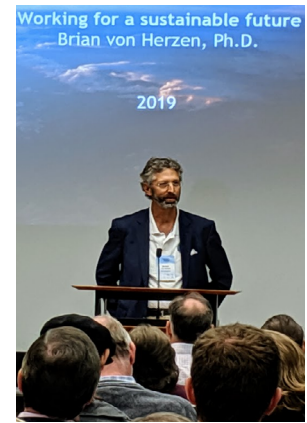
# BRIAN VON HERZEN

CLIMATE FOUNDATION / DIRECTOR & CO-FOUNDER

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3 Little Harbor Rd, Woods Hole, Massachusetts, 02543

T: +1-650-942-9630 // E: brian@climatefoundation.org // www.climatefoundation.org



## EDUCATION

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2019 - Present	<b>PERMACULTURE EDUCATORS PROGRAM</b> Our Permaculture Life with Morag Gamble - Online, QLD Australia Combined Teaching and Design Certificates - International Accreditation
2013 - 2020	<b>MARINE BIOLOGY / OCEAN PHYSICS</b> Woods Hole Oceanographic & Marine Biological Laboratory (MBL) Seven 10-week intensives in marine biology and ocean physics
1989	<b>DOCTOR OF PHILOSOPHY, ENGINEERING AND APPLIED SCIENCE DIVISION, COMPUTER SCIENCE, PLANETARY SCIENCES</b> Caltech; Supervisor: Prof. Alan H. Barr
1984	<b>MASTER OF COMPUTER AND PLANETARY SCIENCE</b> Caltech
1980	<b>BACHELOR OF ARTS / PHYSICS</b> Princeton University Thesis: The Response of Global Climate Models to Orbital Variations

## EXPERIENCE

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2020 - Present	<b>MARINE PERMACULTURE ALLIANCE</b> Founder
2020 - Present	<b>C-COMBINATOR COMPANY</b> Chairman
2019 - Present	<b>PRIME COALITION</b> Board Member
2016 - Present	<b>UCSF CENTER FOR EXCELLENCE IN BIO-ENGINEERING</b> Advisory Board Member
2013 - Present	<b>STANFORD UNIVERSITY, CALTECH / MBL</b> Guest Lecturer
2010 - Present	<b>BRIGHT ENERGY STORAGE TECHNOLOGIES, LLP</b> Board Member
2007 - Present	<b>CLIMATE FOUNDATION</b> Executive Director
1994 - 2013	<b>RAPID PROTOTYPES, INC.</b> CEO
1992 - 1994	<b>SYNAPTICS, INC</b> Engineering Analyst
1989 - 1992	<b>CALTECH SUB-MILLIMETER OBSERVATORY</b> Principal Investigator
1977 - 1980	<b>WOODS HOLE OCEANOGRAPHIC INSTITUTE</b> Research Analyst, Geology and Geophysics

## STATEMENT

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As Executive Director, Dr. von Herzen leads Climate Foundations' large-scale seaweed mariculture programs to produce food, feed and fertiliser, provide ecosystem life support, and sustain blue carbon sinks. With Marine Permaculture, we can regenerate life in seas and soils and restore a healthy climate while building a multi billion-dollar seaweed export market over the next decade.

## NOTABLE SYMPOSIA

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- 2020 SALK INSTITUTE Plant Carbon DrawDown / Audacious Grant Symposium
- 2019 UNITED NATIONS Nature-Based Climate Solutions
- 2019 WORLD WILDLIFE FUND 2040 FILM Debut and Q and A, December
- 2019 DRAWDOWN Research Conference
- 2019 MOROCCO King Africa Security Forum December
- 2019 PERMACULTURE EDUCATION INSTITUTE MasterClass: Marine Permaculture
- 2019 SANTA BARBARA PERMACULTURE NETWORK Lecture and Workshop
- 2018 CLIMATE ACTION SUMMIT San Francisco
- 2018 SEAGRICULTURE Keynote Presentation, Ireland
- 2018 VATICAN, ROME Restoring a Healthy Climate Summit
- 2018 PHYCOLOGY SOCIETY OF AMERICA Marine Permaculture
- 2018 ISS Jeju, Korea
- 2018 US DOE MARINER Program Update, La Jolla, CA

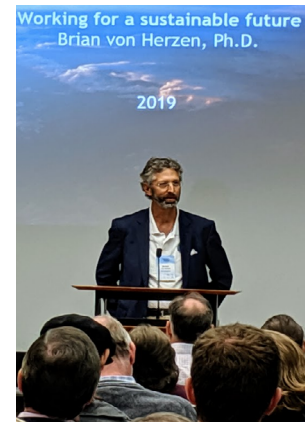
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## GRANTS

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2019	SCHMIDT FUTURES / Protecting the Great Barrier Reef
2017	GRANTHAM FOUNDATION for the Protection of the Environment / Marine Permaculture contribution
2016 - 2018	DEPARTMENT OF FOREIGN AFFAIRS AND TRADE / Blue Economy Challenge - Marine Permaculture
2016 - 2018	UNIVERSITY OF CHICAGO, Urban Labs Delhi Innovation Challenge Eliminating Rice Straw Burning in Haryana using biochar to restore soils
2015	ALASKA Water-Sewer Challenge Winner
2014	NAFTA Commission for Environmental Cooperation Grant, Biochar Phase 2
2013 - 2015	NAFTA Commission for Environmental Cooperation Grant, Biochar Phase 1
2012	BILL AND MELINDA GATES FOUNDATION Phase 2, Biochar Sanitation
2011 - 2013	BILL AND MELINDA GATES FOUNDATION Phase 1, Biochar Sanitation
2010 - 2012	US FISH AND WILDLIFE SERVICE Reversing Coral Bleaching in two Acropora species on coral reefs in American Samoa
2009	REVERSING CORAL BLEACHING on the reefs in American Samoa
1984	Awarded Hughes Doctoral Fellowship
1982	Ametek Leadership Institute
1981 - 1986	Hertz Foundation Fellowship

## AWARDS

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- Hertz Fellowship
- Hughes Doctoral Fellowship
- Advanced Standing, Princeton

## PATENTS

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- 30 Patents Issued
- 6 Patents Pending

## SELECTED PUBLICATIONS, VIDEO, PUBLIC OUTREACH

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2019	FEATURE DOCUMENTARY / <a href="#">2040: The Regeneration</a> Directed by Damon Gameau
2019	INTREPID / <a href="#">Seaweed: The Regeneration</a> <a href="#">Crowdfunding campaign, raised AU\$663,911</a>
2017	DRAWDOWN / Paul Hawken, editor. 100 best ways to restore carbon balance on the planet, Marine Permaculture, April 18, 2017, pp. 178-180.
2016	HARVARD UNIVERSITY / Guest Lecture, Biodiversity for a Livable Climate, <a href="#">Ocean Permaculture</a>
2016	NATIONAL GEOGRAPHIC / From Seaweed to Fish Feed / <a href="#">How Aquaculture Meets the Future</a>
2015	STANFORD UNIVERSITY / Guest Lecture, <a href="#">Balancing Gigatons of Carbon in Soils and Seas</a>
2014	US BIOCHAR INITIATIVE / <a href="#">Large-Scale Biochar Devices processing high-moisture feedstock</a>
2014	<a href="#">Biochar Processing to Restore Soils &amp; Provide Sanitation in Developing Nations</a>
2014	HERTZ FELLOW / <a href="#">Brian von Herzen</a>
2013	BILL AND MELINDA GATES FOUNDATION / Reinvent the Toilet Fair, New Delhi, India, <a href="#">Biochar reactor for human waste processing</a>
2012	REVERSING CORAL BLEACHING in two species of Acropora on reefs in American Samoa, International Coral Reef Symposium 2012, Cairns, Australia
2009	<a href="#">Restoring Overturning Circulation And Co2 Recycling Using Wave-Driven Ocean Pumps</a>
2008	DISCOVERY CHANNEL documentary / <a href="#">Project Earth: Hungry Oceans</a> Lead Scientist

## MEMBERSHIPS

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- Marine Permaculture Alliance (MPA)
- International Coral Reef Society (ICRS)
- Institute of Electrical and Electronics Engineers (IEEE)
- Aircraft Owners and Pilots Association (AOPA)

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## EXPERIENCE - DETAIL

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- 2020 - Present      **MARINE PERMACULTURE ALLIANCE / Founder**  
The Marine Permaculture Alliance is a global alliance to develop the Marine Permaculture industry throughout the world. The Alliance is dedicated to the healthy development of the industry to provide global food security, ecosystem regeneration and measurement of carbon export. This Alliance may provide key assistance in Australia's ambitions to develop a billion-dollar seaweed industry by the next decade.
- 2020 - Present      **C-COMBINATOR COMPANY / Chairman and Founder**  
C-Combinator is organized to raise the capital needed for regenerative solutions in seas and soils. These initiatives have been converting waste seaweed to valuable products and developing the technology to ensure productive seaweed mariculture the world over. Agricultural impacts are profound and contribute strongly to food security.
- 2019 - Present      **PRIME COALITION / Board Member**  
Prime Coalition is a public charity that partners with mission-aligned investors to support extraordinary companies that combat climate change, have a high likelihood of achieving commercial success, and would otherwise have a difficult time raising adequate financial support to scale.
- 2016 - Present      **UCSF CENTER FOR EXCELLENCE IN BIO-ENGINEERING / Advisory Board Member**  
The National Science Foundation has awarded US\$24 million over five years for a new 'blue-sky' bioengineering center based at UC San Francisco. Known as the Center for Cellular Construction, the new initiative aims to transform the field of cell biology into a quantitative discipline and to adapt tools from engineering, the physical sciences, and computer science to design automated machines out of living cells.
- 2013 - Present      **STANFORD UNIVERSITY, CALTECH / MBL / Guest Lecturer**  
Led Stanford Cleantech programs focused on home and utility-scale energy storage systems, solar thermal cooling systems, cleantech entrepreneurship, Marine Permaculture, and restoring depleted soils using Terra Preta microbial permaculture growth.
- 2010 - Present      **BRIGHT ENERGY STORAGE TECHNOLOGIES, LLP / Board Member**  
Bright Energy Storage is dedicated to providing grid-scale energy storage for the deep adoption of renewable energy technologies at costs substantially less than traditional battery storage. As co-founder, Dr. von Herzen helped to raise US\$10 million in angel funding for Bright Energy Storage and associated applications. Bright Energy Storage developed pump thermal energy storage and seafloor compressed-air energy storage technologies for use in time-shifting renewable power and electrical peak load leveling. The company reached final-stage selection for the ARPA-E Grid-Scale Energy Storage, and won Iberdrola Perseo Award for the world's best energy storage technology.
- 2007 - Present      **CLIMATE FOUNDATION / Executive Director**  
At the Climate Foundation, Dr. von Herzen has been leading global programmes to regenerate life in seas and soils. Dr. von Herzen has created and patented new technologies to save ecosystems, ensure global food security and carbon balance. In pursuit of these goals, he has raised over \$10 million in grants and awards, created world wide alliances, and generated global social licence for seaweed mariculture. Dr. von Herzen has educated a generation of climate leaders to develop key initiatives that decarbonize our civilization, Draw down carbon from the atmosphere, and ensure ecosystem life support while balancing the carbon budget. Dr. von Herzen has also reversed coral bleaching on the reefs in American Samoa starting in 2009 using Marine Permaculture as an upwelling and seawater cooling strategy. Brian has presented SeaWater Air Conditioning (SWAC) technology and its relationship to coral reef preservation in 2011 in Guam, and 2012 in Samoa to the US Coral Reef Task Force and Guam Naval Facilities Command (NAVFAC), publishing SWAC with Marine Permaculture in Oman and the Middle East 2015-2018.

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## EXPERIENCE - DETAIL / CONTINUED

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1994 - 2013

RAPID PROTOTYPES, INC. / CEO

Rapid Prototypes provided turnkey electronic product system engineering, including commercial product specifications and fully functional engineering product prototypes frequently using programmable logic devices. Rapid Prototypes provided expertise in electronic engineering technologies to minimize time to market for new electronic products in networking, consumer electronics and other commercial products. They also developed the world's fastest commercial FPGA applications. Brian wrote the original X-Prize space tourism technical plan and business plan for the X-Prize winning spacecraft, leading to the \$25M investment by Paul Allen and the later \$250M investment by Richard Branson leading to the formation of the Virgin Galactic business in space tourism. Brian introduced Paul Allen to Burt Rutan and got the development funded and started.

1992 - 1994

SYNAPTICS, INC / Engineering Analyst

Dr. von Herzen's primary focus was research in video compression. Dr. von Herzen's achievements include: developed digital neural networks using field-programmable gate arrays (FPGAs), commercial applications of digital signal processing and image processing; analyzed hardware to support real-time video motion compensation algorithms and integrated systems.

1989 - 1992

CALTECH SUBMILLIMETER OBSERVATORY / Principal Investigator

Dr. von Herzen designed and developed the world's first VLSI integrated gigahertz cross-correlation spectrometer that could fit on a personal computer. This technology was later copied by NASA to deploy on their radio telescope interferometer and spectrometer arrays. Dr. von Herzen developed and was awarded a National Science Foundation (NSF) grant for VLSI correlator development. He produced a 250 MHz micro-pipelined cross-correlator in a 1.2µm CMOS integrated circuit, designed and developed a 2 GHz digital spectrometer using correlators, designed and developed a 2 GHz gallium arsenide GaAs analog-to-digital converter.

1986

PIXAR / Research Analyst

Dr. von Herzen developed scientific visualization solutions to enable real-time visualization of large datasets and enable transformative inferencing from such multidimensional analysis.

1985

SCHLUMBERGER PALO ALTO RESEARCH / Research Analyst

Dr. von Herzen researched computer AI technology to facilitate multi-dimensional analysis of physical systems with an emphasis on feature recognition and synthetic scientific visualization of physical systems.

1982

DOLBY LABORATORIES / Research Analyst

Brian developed state-of-the-art digital audio compression capability to increase fidelity with manageable bitrate recordings.

1977 - 1980

WOODS HOLE OCEANOGRAPHIC INSTITUTE / Research Analyst, Geology and Geophysics

Brian analyzed data from the Navy nuclear submarine NR-1 to determine the physical oceanography of the near seafloor environment in the straits of Florida, abyssal Pacific Ocean, Arctic Ocean and other sites. He analyzed giant piston cores and benthic foraminifera and provided scientific visualization of key results and findings. Some of this work resulted in peer-reviewed publications summarizing the sedimentary geophysics of the abyssal ocean.