

YOUR PASSPORT TO

THE
COLOR
OF SCIENCE™



Nature
EDITION



PASSPORT

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Celebrating Diversity

in Environmental Science



For over a decade, **The Color of Science™** Program has highlighted the amazing contributions to science, technology, engineering and math (STEM), made by women and persons of color. This “Passport to the Color of Science” showcases the genius, creativity and commitment to the scientific enterprise of just some of these great women and men. We hope you enjoy reading these short biographies of some of the brilliant minds that help make our world a better place and enhance our own living experience. Hopefully one day you can meet them, as they are also, just really, really cool people!

Dr. Frederic Bertley

COSI's President and CEO, and the founder of The Color of Science Program



Warren Washington, PhD

Atmospheric Scientist

Dr. Warren Washington, considered the father of climate change, is one of the first developers of groundbreaking atmospheric computer models which predict future states of the atmosphere, and his work has helped scientists understand climate change. Washington has engaged in research for over 50 years, and has given advice, testimony, and lectures on global climate change.

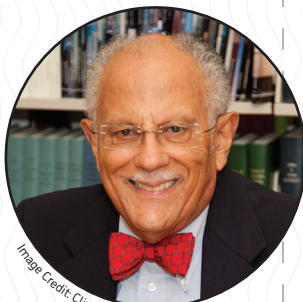


Image Credit: Climate & Global Dynamics

Interesting Fact:

The worst impacts of climate change could be irreversible by 2030.



Lonnie Thompson, PhD Ellen Mosely-Thompson, PhD

Paleoclimatologists

Lonnie Thompson and Ellen Mosley-Thompson, both climate scientists and married for more than 40 years, are researchers who examine the effects of climate change on glacial regions, and help develop the technology to drill deep in the ice. Lonnie is one of the world's foremost authorities on paleoclimatology and glaciology. He has achieved global recognition for his analysis of ice cores from mountain glaciers and ice caps in the tropical and sub-tropical regions. He and Ellen run an ice core paleoclimatology research group today.



Image Credit: The Ohio State University

Fun Fact:

The 20 warmest years on record have been in the past 22 years.



George Washington Carver, PhD

Agriculturalist & Inventor

George Washington Carver is regarded as one of America's greatest agricultural researchers and educators. His innovations in the field of crop rotation are considered breakthroughs in resource conservation, by preserving soil and making farms more productive. Carver may have been one of the first scientists to look at systems through the lens of biomimicry; he observed that nature produces no waste--what is consumed is returned to the whole in another usable form.

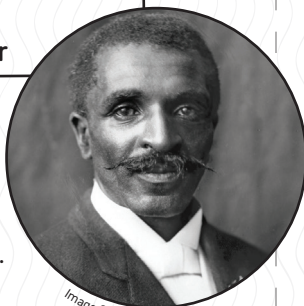


Image Credit: Biography.com

What is Crop Rotation?

It is the practice of growing a series of different types of crops in the same area across a sequence of growing seasons.



Donella Hager Meadows, PhD

Environmental Scientist

Dr. Donella Hager "Dana" Meadows was an American environmental scientist, educator, and writer. She is best known as lead author of the books *The Limits to Growth* and *Thinking in Systems: a Primer*. She taught at Dartmouth College for 29 years. Her work is recognized as a formative influence on hundreds of other academic studies, government policy initiatives, and international agreements.



Image Credit: The Donella Meadows Foundation

Interesting Fact:

We consume over 80 trillion aluminum cans every year.



Maria Miriti, PhD

Ecologist & Professor at
The Ohio State University



Dr. Miriti studies how plant communities work, specifically invasive plants. Plants can't move, which means that the resources they need (nutrients, light and water) have to travel to where plants are or else plants won't survive. Dr. Miriti conducts experiments and uses computer simulations to try to figure out how to manage plants that are useful, such as agricultural crops; plants that can be harmful, such as weeds; or plants that live in their natural habitat.



Did you know? Invasive species compete directly with native species for moisture, sunlight, nutrients, and space.

Katherine Esau, PhD

Botanist



Image Credit: Wikimedia

Dr. Esau's pioneering research laid the groundwork for modern scientists studying plant structure and cell function, and continues to influence generations of botany students.

Her early career in botany centered around researching the hybridization and viruses of crops, and later focused on light-microscope studies of plant anatomy as technology advanced.



Fun Fact:

The earth has more than 80,000 species of edible plants.

Lisa Jackson, PhD

Former Federal Environmental
Protections Agency
Administrator

Dr. Jackson was the first Black female (and one of only a few women) to serve as the federal EPA Administrator. Appointed by President Obama in 2009, she made it a priority to focus on vulnerable groups – including children, the elderly, and low-income communities – that are particularly susceptible to environmental and health threats. After leaving the EPA, in May 2013, Jackson joined Apple as their environmental director.



Image Credit: EPA

Did you know?

No other organism on Earth lives as long as a tree.



David Takayoshi Suzuki, PhD

Researcher

Dr. Takayoshi Suzuki is a science broadcaster and environmental activist. Suzuki earned a Ph.D. in Zoology from the University of Chicago and was a professor in the genetics department at the University of British Columbia. A longtime activist to reverse global climate change, Suzuki co-founded the David Suzuki Foundation, to work to find ways for society to live in balance with the natural world that does sustain us.



Image Credit: Timetoast.com

Interesting Fact:

Each year, Americans throw away 25 billion Styrofoam cups.



Ursula Marvin, PhD

Planetary Geologist

Dr. Marvin is a scientist that worked for the Smithsonian Astrophysical Observatory. She won the 1997 Lifetime Achievement Award from Women in Science and Engineering. In 1986, the Geological Society of America awarded her their History of Geology Award. She taught mineralogy at Tufts University for two years before she was offered a job researching meteorites at Harvard.



Did you know?

A modern glass bottle takes 4000 years or more to decompose.



Tanya Atwater, PhD

Geophysicist & Geologist

Dr. Atwater is an marine geologist who specializes in plate tectonics. She is particularly renowned for her early research on the plate tectonic history of western North America. In 2019 she received the highest award of the Geological Society of America, the Penrose Medal. Atwater was involved in oceanographic expeditions using deep towed instruments to explore the ocean floor. To date, she has participated in 12 deep water dives in the deep-ocean submersible Alvin.



Fun Fact:

Earth is the only planet in the solar system with plate tectonics.



Marie Tharp, PhD

Geologist

Dr. Tharp created the first scientific map of the Atlantic Ocean floor. This work informs the world about the extreme topographic relief and landscaping of the ocean floors. Most importantly, this work introduces the concept of the mid-ocean ridge system underlying the Atlantic Ocean. This ridge system contributes to tectonic movement, and the theory of plate tectonics.



Image Credit: Wikipedia

Women in STEM Fact:

As of 2018, women in geology currently make up approximately 20% to 30% of the faculty in most academic institutions, worldwide.



Aldo Leopold, PhD

Ecologist & Author

Dr. Leopold is considered by some to be the godfather of wilderness conservation and of modern ecologists. After studying forestry at Yale University, he worked for the U.S. Forest Service. Though he was originally asked to kill bears, cougars, and other predators on federal land because of demands of protesting local ranchers, he later adopted a more holistic approach to wilderness management. His best known book, *A Sand County Almanac*, remains one of the best pleas for preservation of the wilderness.

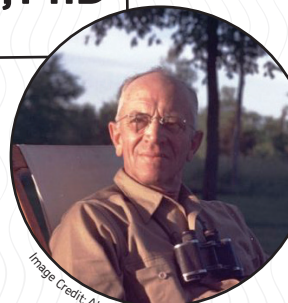


Image Credit: Aldo Leopold Foundation

Interesting Fact:

A single recycled plastic bottle saves enough energy to run a 100-watt bulb for 4 hours.



Robert Bullard, PhD

Environmentalist

Dr. Robert Bullard is often referred to as the “father of the environmental justice movement.”

He has been one of the leading voices on the issue for decades. In 2008, he was named one of Newsweek’s 13 “Environmental Leaders of the Century.” Dr. Bullard has authored numerous books on the prominence of waste facilities in predominately Black neighborhoods all over the nation, as well as others that address urban land use, industrial facility siting, housing, transportation, climate justice, emergency response, smart growth, and equity.



Image Credit: DrRobertBullard.org

Fun Fact:

Trees help improve our water quality as they slow and filter rainfall.



Rachel Carson, PhD

Marine Biologist & Environmentalist

Marine biologist and writer Rachel Carson is known as one of the most important conservationists in history and is recognized as the mother of modern environmentalism. She challenged the use of man-made chemicals, and her research led to the nationwide ban on DDT and other pesticides.

Dr. Carson’s best-known book, *Silent Spring*, led to a presidential commission that largely endorsed her findings and helped to shape a growing environmental consciousness.



Image Credit: Biography.com

Did you know?

Heat is the deadliest weather condition.



Dianne Glave, PhD

Agriculturalist

Dr. Glave is a historian and professor. Her love of nature has translated professionally and vocationally and she writes and speaks extensively on the topic.

She is currently serving as the associate pastor at Ingomar Church in Pittsburgh, where part of her ministry is advocacy for impoverished and marginalized people affected by environmental disparity including access to recreational spaces and healthcare. She is the author of *Rooted in the Earth: Reclaiming the African American Environmental Heritage*.



Image Credit: Diversegreen.org

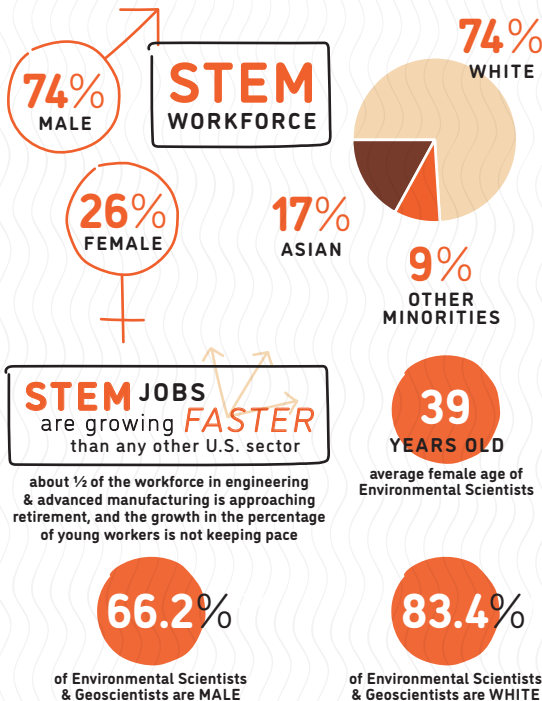
Interesting Fact:

No other organism on Earth lives as long as a tree.



FUN FACTS

WHY WE NEED DIVERSITY in STEM





For more information on
the Color of Science™
please visit:
cosi.org/colorofscience
#scienceisforeveryone



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