YOUR PASSPORT TO

THE COLOR OF SCIENCE™

HER ROYAL SCIENTIST™ EDITION

PASSPORT

Passport No.
314159265

Surname / (Last Name)

Given Name / (First, Middle)

Date of issue

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Celebrating Diversity in STEM

Image Credit: Camille Schrier

The Color of Science™ is COSI's signature diversity and equity initiative which spotlights the amazing contributions to science, technology, engineering and math (STEM), made by women and persons of color through various year-round programming. In this passport, you will explore the great diversity that exists within science and engineering landscapes. We hope you enjoy reading these stories of some of the most remarkable women and men who are researchers, scientists and engineers!

Dr. Frederic Bertley
COSI's President and CEO,
Founder, The Color of Science™

Camille Schrier

PharmD Student
HER ROYAL SCIENTIST™

Image Credit: Camille Schrier

Image Credit: Bruce Boyajian

Camille will complete her doctor of pharmacy degree in 2024, and holds two bachelor degrees in biochemistry and systems biology, with a minor in chemistry. She was the first winner in the 100 year history of the Miss America competition to earn the title and crown with the help of science as her talent, after she completed a chemistry demonstration of the catalytic decomposition of hydrogen peroxide with potassium iodide- also known as "elephant's toothpaste!"

Did you know?
Camille has an initiative called Mind Your Meds™, which focuses on promoting prescription drug safety and combating the opioid epidemic!

Jennifer Dounda, PhD

Award winning Biochemist & Researcher

Image Credit: Christopher Michel

Dr. Dounda is biochemist who has been a pioneer in research surrounding CRISPR gene editing. She, alongside Dr. Emanuelle Charpentier, received the 2020 Nobel Prize in Chemistry, for their work in developing a method for genome editing. Dr. Dounda earned her PhD from Harvard University and currently works as a researcher at UC Berkeley and the National Academy of Sciences.

Did you know?
There are between 30,000 and 40,000 genes in the human genome.

Emmanuelle Charpentier, PhD

Professor & Award Winning Researcher

Image Credit: Nobel Prize

Dr. Charpentier is a French professor and researcher in microbiology genetics and biochemistry. She, alongside Dr. Jennifer Dounda, received the 2020 Nobel Prize in chemistry for their development of methods of genome editing. This was the first science Nobel prize ever won by two women alone. Her work with developing CRISPR has revolutionized genetics by allowing scientists to edit genes to develop health therapies.

Interesting Fact:
A human being can be made from a gene count only twice as great as that of a fly or worm.

Kathryn Sullivan, PhD

Former NASA Astronaut & Oceanic Explorer

Image Credit: NASA

Dr. Sullivan is a geologist and a former NASA astronaut. She has been on three Space Shuttle missions and she was the first American woman to walk in space! Dr. Sullivan logged a total of 532 hours in space. In 2020, she became the first woman to dive to the Challenger Deep in the Mariana Trench, which is the deepest part of the ocean! Check out our Color of Science website for an exclusive interview with Dr. Sullivan and Dr. B!

Fun Fact:
Dr. Sullivan was once the President and CEO of COSI!

David Gan, PhD
Cosmetic Scientist


Image Credit: Mary Kay

Dr. Gan is a Senior Principal Scientist with Mary Kay. Dr. Gan leads the Skin Technology team responsible for identifying innovative technology to provide skin benefits in Mary Kay products. With over 21 years of experience in skin science research, David has over 50 invention patents globally, which support many different Mary Kay skin care products around the world.

Did you know?
Every single makeup product is a chemical concoction that is developed by a scientist!

Bessie Blount Griffin, MS
Inventor & Forensic Scientist


Image Credit: Blackpast.org

Bessie was a woman of many talents. She was a nurse, an inventor with a patent, a physical therapist, and expert in forensic handwriting analysis. As a nurse, she came up with a device that consisted of a tube that delivered individual bites of food to the patient at his or her own pace. She also studied handwriting and made significant breakthroughs in technologies for forensic science. Bessie became a role model for women and African Americans for her pioneering work.

Interesting Fact:
Permanent scarring is the only way a fingerprint can change.

April Basi, BS
Cosmetic Chemist

Image Credit: AprilBasi.com

April Basi was born and raised in Nigeria, and is currently living and working in the US. April is a fashion model, represented by the Campbell Agency, and has modeled for many well known brands. She currently works as a process development chemist testing skincare and makeup formulas before they enter mass-production. She earned her Bachelor's Degree in Chemistry from Texas Tech. She is a fashion and skincare blogger and you can find her blog at aprilbasi.com.

Fun Fact:
The first nail polish was invented in China in 3000 B.C. by mixing egg whites, beeswax, gum, and colored powder.

Lilli Hornig, PhD
Scientist & Researcher

Image Credit: Digital Trends

Dr. Hornig immigrated to the US as a refugee during World War II. She went on to earn her Bachelor's degree in Chemistry and a Master's degree from Harvard. As a researcher and chemist, she witnessed the first test detonation of the atomic bomb, and advocated for the protection of civilians. Dr. Hornig became a champion for female scientists and founded Higher Education Resource Services (HERS) which researches discrimination against women.

Interesting Fact:
Diamond and graphite are both entirely made of carbon and nothing else.

Katherine Bouman, PhD

Engineer

Image Credit: Caltech

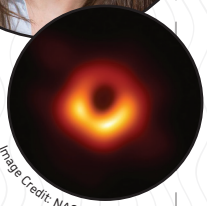

Image Credit: NASA.gov

Dr. Bouman is an engineer and computer scientist working in the field of computer imagery. She is best known for developing a crucial algorithm that allowed for the capture of the first-ever image of a black hole in 2019. Dr. Bouman's research in imaging has played a critical role in advancing science. She earned her Ph.D. in Electrical Engineering from Massachusetts Institute of Technology (MIT).

Fun Fact:
Dr. Bouman's algorithm allowed a telescope to capture this first-ever image of a black hole.

Stephanie Kwolek, BS

Chemist & Inventor

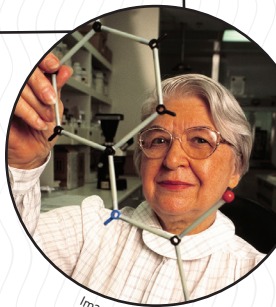

Image Credit: Forbes.com

Stephanie was a chemist and fiber scientist, and was known for inventing Kevlar, an exceptionally strong material used in vests, boats, airplanes, and more. Her invention has gone on to be used in over 200 applications. She has received many awards and was inducted into the National Inventors Hall of Fame, being only the 4th woman in history to be inducted at that time.

Fun Fact:
Kevlar is five times stronger than steel on an equal weight basis.

Lucy Gildea, PhD

Chief Scientific Officer

Image Credit: Mary Kay

Dr. Gildea is the Chief Scientific Officer at Mary Kay. Dr. Gildea leads the company's global research and development team to create new Mary Kay products. She has worked in the beauty and skincare industry for over 20 years. She earned a PhD in Cell and Molecular Biology, Immunology and Infectious Diseases from the Cincinnati College of Medicine. She has been at the forefront of cutting-edge scientific research in makeup and skincare.

Did you know?
While the Greeks get credit for the origins of the word "cosmetics," the ancient Egyptians were the first to use makeup.

Yuly Fuentes-Medel, PhD

Biomedical Engineer

Image Credit: yfuentes-medel.com

Dr. Fuentes-Medel graduated with a PhD in biomedical sciences from the University of Massachusetts Medical School. Dr. Fuentes-Medel is the founder and CEO of Descience, a global collective of fashion designers, scientists and technologists. Descience creates collaborations between designers and scientists and brings research to the runway, providing a platform both for emerging designers and for science.

Interesting fact:
It takes 700 gallons of water to make a cotton shirt, and cotton is the most commonly used textile in the world. That's a lot of water!

Yasser Gowayed, PhD
Professor


Image Credit: Auburn University

Dr. Gowayed is the chair of the department of Fiber Science and Apparel Design at Cornell University. His research focuses on understanding thermal behaviors of ceramic materials. Some of his complex research is currently being used by many aerospace companies and government agencies to design things like gas turbines and heat exchangers.

Did you know?
Some ceramics conduct electricity better than metals.

Ruth Benerito, PhD
Chemist and Inventor


Image Credit: Science History Institute

Dr. Benerito is considered to be one of the biggest change makers in the textile industry due to her development of wrinkle free cotton fabrics. She held an amazing 55 patents! She earned several degrees in chemistry, kinetics, physics, and math. Benerito discovered a way to chemically treat the surface of cotton so that it would not wrinkle and would be resistant to flames. Her invention was said to have saved the cotton industry.

Fun Fact:
Scientists have created flowing smart textiles that could change the future of clothing!

Juan Hinestroza, PhD

Professor of Fiber Science & Apparel Design

Image Credit: Cornell University

Dr. Hinestroza is a fiber scientist and directs the Textiles Nanotechnology Laboratory at the College of Human Ecology of Cornell University. He and his team work to study textile and fiber materials, and leverage advanced technology to study the synthesis of materials at small scales. Dr. Hinestroza is an inventor and holds more than 30 international patents!

Did you know?
Clothes can take up to 40 years to decompose.

FUN FACTS

WHY WE NEED DIVERSITY in STEM

74% MALE

STEM WORKFORCE

26% FEMALE

74% WHITE

17% ASIAN

9% OTHER MINORITIES

STEM JOBS are growing *FASTER* than any other U.S. sector

WOMEN with **STEM** jobs EARNED **33%** MORE than comparable women in non-STEM jobs

Want to be a Makeup Scientist?

65K average salary of **COSMETIC CHEMISTS** per year in the US

75% of non-**STEM** jobs will require basic STEM skills

For more information on the Color of Science™ please visit:

cosi.org/colorofscience

#scienceisforeveryone

scan here
to learn more about
The Color of Science™

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Center of Science and Industry