



**CELEBRATING
FAMOUS BLACK
MATHEMATICIANS &
THEIR
ACCOMPLISHMENTS**



October 6, 1949 - Present

Lonnie Johnson

Born in **Mobile, Alabama**, Lonnie Johnson went on to obtain a masters in **Nuclear Engineering** from **Tuskegee University**.

When Johnson was 8, his father and him built a chinaberry shooter out of Bamboo Shoots. When he was 13, he built a go-kart from a lawn mower engine and scraps and raced it down the highway before getting pulled over.

He used his math skills as an engineer with the **US Air Force** and **NASA**, worked on a **Spacecraft** that went to Jupiter, is the inventor of the **Super Soaker Water Gun**, and is currently working on creating **low-cost solar power** through the **Johnson Thermoelectric Energy Converter** which is an engine that converts heat into electricity.

Through his career and invention of the Super Soaker, Johnson currently has a net worth of \$360 million.



April 23, 1933 - June 25, 2011

ANNIE EASLEY

Born in **Birmingham, Alabama**, Annie Easley earned her Bachelor's of Science in **Mathematics** from **Cleveland State University**.

Easley started her career as a **substitute teacher** and helped prepare African Americans voters for literacy tests so they could vote. With no education at the time, but with strong math skills and a strong work ethic, Easley was hired as a **Human Computer** for **NASA**, performing complex mathematical operations. As computers replaced humans, she and became a computer scientist to support a number of NASA programs. Easley analyzed **alternative power technology**, including the batteries used in today's Hybrid cars and the **Centaur Program** that helped launch the **Cassini Spacecraft** to **Saturn** in 2017, years after her death.

She spent the end of her career working as an **Equal Employment Opportunity Counselor** dealing with discrimination complaints in NASA.



October 17, 1956 - Present

MAE CAROL Jemison

Born in **Decatur, Alabama** (moving to **Chicago, Illinois** when she was three), Mae Carol Jemison obtained a degree in **Chemical Engineering** from **Stanford University** and completed **medical school** at **Cornell Medical School**.

Jamison spent her early years working as a **Peace Corps Volunteer** in Africa, being fluent in Russian, English, Japanese, and Swahili. Jamison also opened a private practice as a **Doctor** a number of years before becoming the **First African American Woman Astronaut** in space. Jamison worked with **NASA** as an Astronaut for six years before opening up a science camp in honor of her mother and leading the **100 Year Starship Project** through the United States Defense Advanced Research Project Agency with goals of making human space travel to another star possible within the next 100 years.



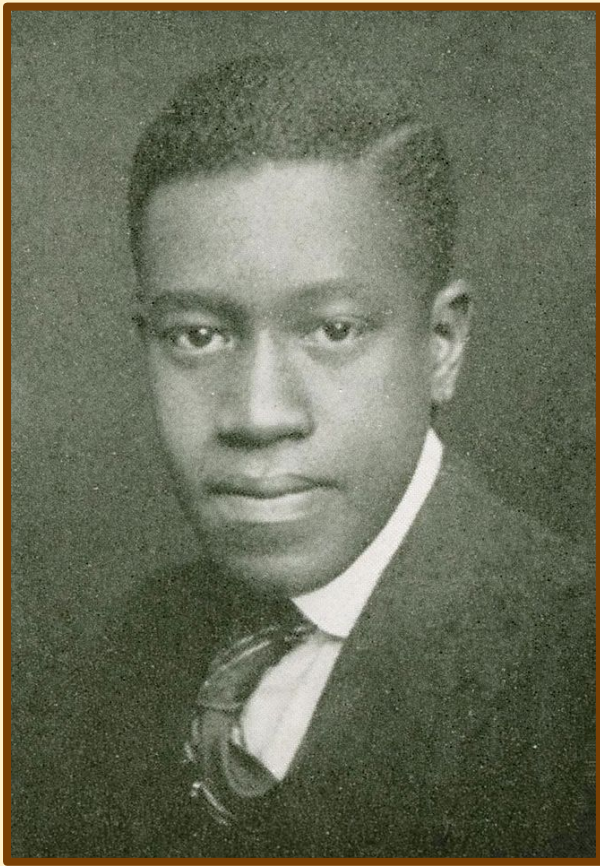
Aug 26, 1918 - February 24, 2020

KATHERINE JOHNSON

Born in **White Sulfur Springs, West Virginia**, Katherine Johnson earned her **Bachelor's of Science in Mathematics and French** from **West Virginia State University** and is heralded as the "**First African American Woman in Aerospace Engineering**".

Johnson's love of Mathematics allowed her to skip grades and start high school at 10 and graduate when she was 14 and was one of three African American students picked to **integrate West Virginia's Graduate Schools**. Working as a **Mathematician** with **NASA**, Johnson **helped verify calculations** for the first American to orbit the Earth and **crafted the navigational path for the first humans to land on the moon**. She was awarded the **Presidential Medal of Freedom**, America's highest civilian honor in 2015 by President Barack Obama for her contributions to NASA.

The movie, '**Hidden Figures**' highlights her involvement in the verifying calculations for the first American to orbit the Earth.



ELBERT FRANK COX

Born in **Evansville, Indiana**, Johnson earned a **PhD** in **Mathematics** from **Cornell University**. Elbert Cox was the **first African American** to earn a PhD in Mathematics.

Cox earned his PhD in mathematics at a time when there was only 28 PhD's in Mathematics in the entire country and faced extreme racial discrimination along the way. Cox helped lead **Howard University**, where he taught as a Professor, as a Historically Black College and Universities principle place of learning. He **helped build the mathematics program** at Howard University to a **PhD Program** which **opened the doors** to African American doctoral candidates. He eventually would serve as **Chair of the Mathematics Department** and was so well revered, that Howard University **established a scholarship in his honor** to financially assist African American undergraduates to pursue mathematics at the graduate level.

Dec. 5, 1895 - November 28, 1969

MARK DEAN

Born in **Jefferson City, Tennessee**, Mark Dean earned a **PhD in Electrical Engineering** from **Stanford University**.

Dean's remarkable work as a **Computer Scientist** at **IBM** led him to **co-invent IBM's personal computer** and later on, his work led to the development of the world's **first color pc monitor**. Dean is also responsible for **developing technology that allows devices to communicate with each other** (keyboards, computer mice, printers, etc). Dean also managed the team that created the first **gigahertz processing chip**, a piece of technology that is able to do a billion calculations in a second.

"A lot of kids growing up today aren't told that you can be whatever you want to be," Dean has said. "There may be obstacles, but there are no limits."

March 2, 1957 to Present





VALERIE THOMAS

Born in **Maryland**, Thomas received a degree in **Physics** from **Morgan State University**.

Thomas was always fascinated with how things work, stating that her inspiration in the STEM field started after watching her fix televisions. After completion of college, Thomas landed a job as a **Data Analyst for NASA**. There, she helped **develop an image processing system** for Landsat, the first satellite to send images to Earth from space. She also **developed an illusion transmitter** which allows **images to appear more 3-dimensional** which changed the way television is seen and aided in surgeries. Thomas also helped to **develop computer design programming** that was used to **research Haley's comet**.

In her later years, Thomas mentored youth through the National Technical Association and Science Mathematics Aerospace Research and Technology, a service she wished she had as a student.

February 8, 1943 - Present

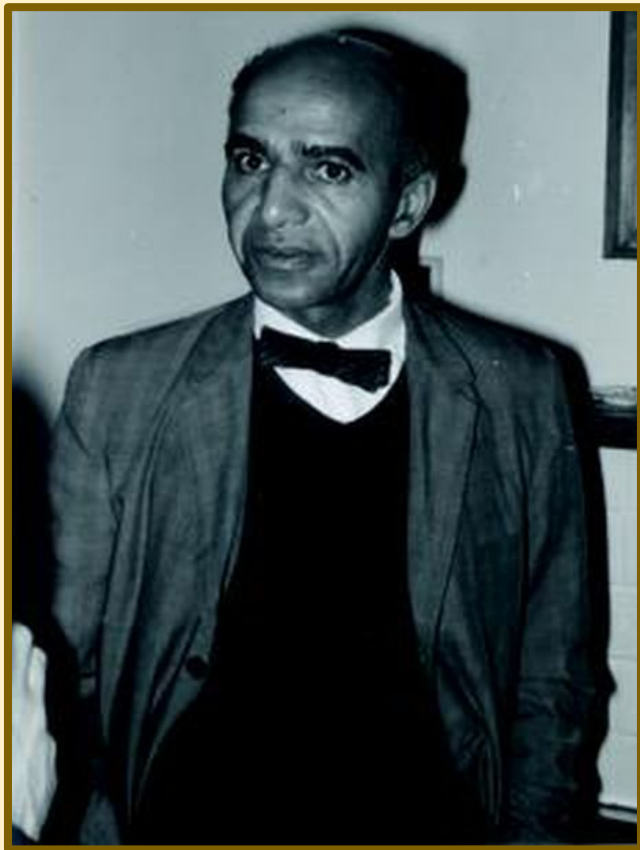


June 24, 1991 - Present

JOHN URSCHEL

Born in **Winnipeg, Minnesota**, John Urschel has a **masters degree in Mathematics** from **Penn State University**.

Urschel is perhaps most famous for playing **college football** at **Penn State** and for the **Baltimore Ravens** as an **offensive lineman**. He is currently working on his **PhD in Mathematics** from **MIT**. At only 25, Urschel has published several scholarly, peer-reviewed papers on **multi-grid methods** to help understand if there are **multiple dimensions between space and earth**. His most important contribution is his theorem to the math community related to **spectral bisection of graphs**, a field focusing on the relationship between networks (useful in social media to find friend connections, ranking links in Google searches, finding shortest path home with GPS, etc). Urschel helps to break down the barriers in society that create preconceived notions that you can not excel at sports and mathematics simultaneously.



DAVID HAROLD BLACKWELL

Born in **Centralia, Illinois**, David Harold Blackwell earned his **PhD in Mathematics** from the **University of Illinois-Urbana-Champaign**.

Upon completion of his studies, Blackwell secured a Rosenwald Fellowship at Princeton University, after initially being denied due to his race. He then took on a position as a **Professor of Statistics** at the **University of California-Berkeley**. He also became a **Consultant** to the **RAND Corporation** where he **developed the Theory of Duels**, which analyzed the optimal timing of armed duelists which aided the military. Blackwell would continue to publish various theorems that are widely used to assist in **engineering** and **statistics** today.

Blackwell was the **first African American** inducted into the **National Academies of Sciences**

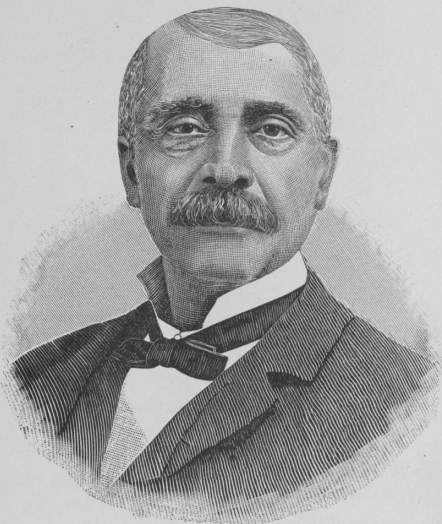
April 24, 1919 - July 8, 2010

CHARLES L. REASON

Born in **New York City**, Charles Lewis Reason

At the age of 14, Blackwell **taught at the African American Free School** in New York City and used his \$25 yearly salary to pay tutors to continue his own education. Reason was the **first African American professor** to teach at a predominantly white college. At that time, only 15 black students had even attended college. Reason would later work for **the Institute of Colored Youth** to help **expand the library holdings to African American leaders**. He later returned to New York City to be a **School Administrator** and helped lead the fight in 1873 to **end racial segregation in schools**.

In addition to being an educator, Blackwell was also a poet (“Freedom”, “The Spirit Voice”, “Silent Thoughts”) and a well known abolitionist, believing that industrial education was a means of freedom for African Americans at the time.



CHARLES L. REASON.

July 21, 1818 - August 16, 1893



Sept 9, 1914 - October 19, 1979

MARJORIE Lee BROWNE

Born in **Memphis, Tennessee**, Marjorie Lee Browne received her **PhD in Mathematics** from the **University of Michigan**. Marjorie Lee Browne was the third African American woman to earn a PhD in her field.

Initially a **teacher**, Browne went on to land a career as a **professor** at **North Carolina College** (now North Carolina Central University), becoming **Chair of the Mathematics Department**, securing her college as the home of the **National Science Foundation Institute for Secondary Educators**, helping further mathematics education for teachers. In doing so, she helped pave the way for integrated organizations.

Browne used her own money to help prepare and further the education of gifted math students and to help them complete their PhD in mathematics.



Nov 9, 1731 - October 9, 1806

BENJAMIN BANNEKER

Born in **Ellicott's Mill, Maryland**, Banneker was a **self-educated mathematician and astronomer**.

Born a free African American, Banneker had no formal education, but would become the first African American scientist to gain distinction in the field of science. His significant accomplishments include **the successful prediction of a major solar eclipse** (which contrasted better known scientists), **publishing his own Almanac**, and **building the world's first clock** at the age of 24, all out of wood, that kept precise time for decades. Banneker was also hand-picked by **Thomas Jefferson to survey** Washington, DC, making it the monumental capitol it is today.

He also challenged Jefferson, a close friend, to get rid of the idea that one race was superior to another when he served as Secretary of State.

DUDLEY WELDON WOODARD

Born in **Galveston, Texas**, Woodard earned a **PhD in Mathematics** from the **University of Pennsylvania**. He was the **second African American** to earn a PhD in Mathematics.

Woodard joined the faculty at **Howard University** and began his career as a **professor of Mathematics** and **Dean of the College of Arts and Sciences**. Along with his colleague Elbert Frank Cox, Woodard **helped establish Harvard's graduate program for mathematics** and the **mathematics library at Howard University**. He spent his life dedicated to educating students in the field of mathematics and research. His research is the **first research to be published in an accredited mathematics journal** by an African American.

Woodard taught and mentored many notable African American mathematicians including Marjorie Lee Browne and W.W.S. Claytor.



October 3, 1881 - July 1, 1965



Sept 20, 1910 - Nov 10, 2008

DOROTHY VAUGHAN

Born in **Kansas City, Missouri**, Dorothy Vaughan obtained a degree in **Mathematics** from **Wilberforce University**.

Vaughan worked as a **Human Computer** and **Mathematician** for **NASA**, before becoming the **first African American Manager** for **NASA**. Vaughan led a section of African American women who made **complex mathematical calculations for flights by hand**. When mathematical calculations for flights were taken over by IBM computers, Vaughan taught herself and her staff how to use **computer programming (FORTRAN)** for the same flight calculations. Vaughan also worked with the **SCOUT Launch Program** to produce inexpensive, solid fuel launch vehicles into space, helping to propel the US as a leader in the Space Race with the Soviet Union.

Vaughan's contributions and life were included in the movie "**Hidden Figures**".



CLIFFORD V. JOHNSON

Born in **London**, Clifford V. Johnson earned his **PhD in Mathematics and Physics** from the **University of Southampton**.

Johnson is a **theoretical physicist** and **professor** whose work with researchers at the **University of California** and **Princeton University** on understanding **string theory**, which has been used to further understand **black holes** in the universe and **the next step for our growing understanding of the universe**, thought to be the next advancement of a technological revolution (though in the unforeseeable future). He is part of the international efforts to **describe and understand the origins of the universe**. Johnson is the most highly cited black professor of mathematics and works as a **science consultant** for television and movies, including the production of **Avengers: Endgame** and **Star Trek: Discovery**. He regularly appears on **The History Channel** and the **Discovery Channel** to promote mathematics and physics interest.

March 5, 1968 - Present



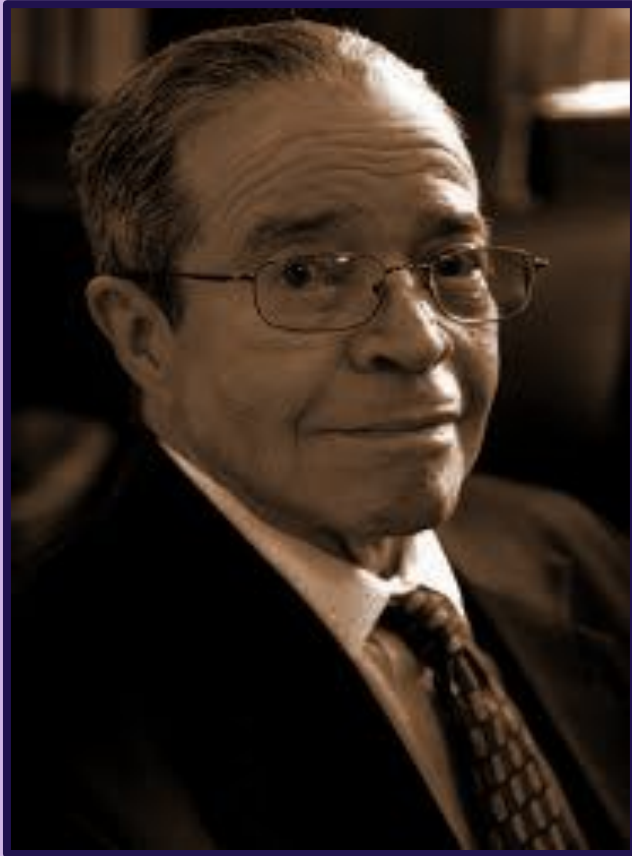
GLADYS WEST

Born in **Sutherland, Virginia**, West earned a Masters in Mathematics prior to receiving a **PhD in Public Administration** from **Virginia Tech**.

West started her career out as a **Human Computer** and then **Computer Programmer**, working on a study that **proved Pluto's relative motion to Neptune**, which required 5 billion arithmetic calculations and 100 hours to complete. This helped to measure Earth's distance from an object (ex: airplane), otherwise impossible to do. Over the years she used the details from that project to help create a detailed and mathematically accurate model of the shape of the Earth. This is one of the reasons you can **receive driving directions (GPS)** or **tag locations on photos** with your cell phone.

1930 - Present

In 2018, West was inducted into the Space and Missiles Pioneers Hall of Fame.



Nov 27, 1923 - May 1, 2011

J. ERNEST WILKINS JR.

Born in **Chicago, Illinois**, Jesse Ernest Wilkins Jr. earned a **PhD in Mathematics** from the **University of Chicago**.

Wilkins remains the University of Chicago's youngest student (ever), attending at the age of 13. Heralded by the media as the "Negro Genius", President Eisenhower appointed him **Assistant Secretary of Labor for International Affairs**, the first appointment of an African American to to such a position in the federal government. Wilkins worked as a **Physicist** with the **Manhattan Project**, hoping it would help create peaceful applications of atomic energy.

While teaching at **Howard University** as a **Distinguished Professor of Mathematics**, Wilkins continued his work on Atomic Energy, co-owning a company that developed **nuclear reactors** for electrical power generators.



EUPHEMIA HAYNES

Born in **Washington, D.C.**, Martha Euphemia Lofton Haynes earned a **PhD in Mathematics** from the **Catholic University of America**. Haynes was the **first African American woman** to earn a PhD in Mathematics.

Haynes' career started as she **founded the math department** at **Miner Teachers College** (University of the District of Columbia), focusing on **training African American Educators**. Haynes also served as the **School Board President** for the **District of Columbia Schools**, being an **outspoken critic** of the school system's **de facto segregation** and tracking system which tracked kids into academic or vocational programs based on "ability". As President of the School Board, Haynes led the way for DC Schools to **abolish de facto segregation** in 1967.

She also **co-funded the catholic Interracial Council of D.C.**

Sept 11, 1890 - July 25, 1980



April 9, 1921 - February 11, 2005

MARY JACKSON

Born in **Hampton, Virginia**, Mary Jackson earned her **Bachelor's of Arts degree in Mathematics and Physical Science** from Hampton Institute.

Jackson began her career at **NASA** as a **Human Computer** and helped NASA succeed in getting **American Astronauts**. Initially a **Research Mathematician**, she later finished her career as an **engineer** focusing on boundary air around airplanes, becoming the **first African American female engineer** to work at NASA.

Jackson's contribution to the space program received recognition after her death, with NASA renaming its agency headquarters the **Mary W. Jackson NASA Headquarters** and being awarded a **Congressional Gold Medal** for her accomplishments. She was also featured as one of the three protagonists in the movie "**Hidden Figures**".



January 14, 1948 - Present

FERN HUNT

Born in **New York City**, Fern Yvette Hunt received her **Ph.D in Mathematics** from **New York University's Courant Institute of Mathematics**.

Hunt started her career out as a **professor** at various institutions, including the **University of Utah** and **Howard University**, while also worked as a **researcher** in the **mathematical biology** lab at the **National Institute of Health** and **National Institute of Standards and Technology**. Hunt's research has focused on **applied probability**, creating mathematical movements that help determine different kinds of movements. Hunt also **conducts research** into **biomathematics** to look at **genetic variations and patterns in bacteria**, helping to promote the scientific study of bacteria and develop new hypothesis for improved understanding of bacteria.

In her spare time, Hunt mentors African American youth in Mathematics.