



2022 NATIONAL INVENTORS  
HALL OF FAME INDUCTEE

**Born:** May 14, 1955

**Primary Connections:**

- Google, 2014-present: Lead of Research Center for Responsible AI and Human Centered Technology; Vice President of Site Reliability Engineering Ads, Corporate Engineering and YouTube; Vice President of Access Strategy and Emerging Markets
- AT&T, 1982-2014: Senior Vice President, Domain 2.0 Architecture and Advanced Services Development; Senior Vice President of Applications and Services Infrastructure; Vice President of the Services Network in Research and Development

**Education:**

- Princeton University: Bachelor's Degree, 1977
- University of Southern California: Ph.D., Quantitative Analysis and Psychology, 1982

**Key memberships/awards:**

- Edison Best New Product Award, Gold, 2014
- U.S. Black Engineer Magazine: Black Engineer of the Year, Outstanding Technical Contribution-Industry, 2014
- R&D Council of New Jersey: Edison Patent Award, 2013

10 Things You Need to Know About

# Marian Croak

## VoIP (Voice over Internet Protocol) Technology

U.S. PATENT NO. 7,599,359

---

1. Croak was born in 1955 in New York City.
2. She currently is a member of the Corporate Advisory Board for the Viterbi School of Engineering at her alma mater, the University of Southern California.
3. Croak is also a former board member for such organizations as the Alliance for Telecommunications Industry Solutions; Catalyst; the Holocaust and Human Rights Museum (New Jersey); and the National Action Council for Minorities in Engineering.
4. She has received awards for her text-to-donate technology, inspired by Hurricane Katrina in 2005. The technology raised \$130,000 in relief funds.
5. Text donations after the 2010 Haiti earthquake totaled \$43 million.
6. Croak is included in the United States Patent and Trademark Office (USPTO) Collectible Cards series.
7. She also was featured in the USPTO's SUCCESS (Study of Underrepresented Classes Chasing Engineering and Science Success) Act Report in 2018.
8. Croak is a member of the Women in Technology International Hall of Fame.
9. She has mentored many individuals pursuing STEM careers.
10. Croak has more than 200 U.S. patents.



2022 NATIONAL INVENTORS  
HALL OF FAME INDUCTEE

**Born:** Oct. 6, 1949

**Primary Connections:**

- Johnson Battery Technologies: Founder and President, 2011-present
- Excellatron Solid State LLC: Founder and President, 1998-present
- Johnson Research & Development Co. Inc.: Founder and President, 1990-present
- NASA Jet Propulsion Laboratory, 1979-82 and 1987-91: Engineer, Mars Observer Project; Fault Protection Engineer, Cassini Project; Power Systems Engineer, Galileo Project

**Education:**

- Tuskegee University: B.S., Mechanical Engineering, 1973; M.S., Nuclear Engineering, 1975

**Military Service:**

- U.S. Air Force, 1975-79 and 1982-87

**Key memberships/awards:**

- Alabama Business Hall of Fame: Inductee, 2020
- National Toy Hall of Fame: Super Soaker Inducted, 2015
- State of Alabama Engineering Hall of Fame: Inductee, 2011
- National Black College Alumni Hall of Fame: Industry Category, 2010

## 10 Things You Need to Know About

# Lonnie Johnson

## Inventor of the Super Soaker®

U.S. PATENT NO. 4,591,071

1. Johnson was born in 1949 in Mobile, Alabama.
2. At NASA's Jet Propulsion Laboratory, Johnson worked on the Galileo (Jupiter), Cassini (Saturn) and Mars Observer projects.
3. As a member of the U.S. Air Force, he held several positions in the Strategic Air Command and the Air Force Weapons Laboratory.
4. While at the Jet Propulsion Laboratory, Johnson came up with the idea for the Super Soaker after being inspired watching a stream of water from a small nozzle he had made and attached to his bathroom sink during an experiment on an environmentally friendly heat pump he was developing during his spare time. He built the first prototype after rejoining the Air Force in 1982.
5. With the success of the Super Soaker, Johnson established Johnson Research & Development as an inventor/incubator company under which he develops and spins out other companies to commercialize his inventions.
6. He also has a number of patents for compressed air toy projectile launchers, which became popular Nerf toy guns.
7. Over the years, sales of the Super Soaker have totaled well over \$1 billion.
8. Two of Johnson's companies, Johnson Energy Storage and Johnson Air Batteries, are developing revolutionary battery technology.
9. For JTEC Energy's Johnson Thermo-Electrochemical Converter (JTEC), he received the Breakthrough Award from Popular Mechanics in 2008.
10. Johnson has more than 100 U.S. patents.



2022 NATIONAL INVENTORS  
HALL OF FAME INDUCTEE

**Born:** Jan. 17, 1955

**Primary Connections:**

- BioNTech AG: Senior Vice President, 2013-present
- RNARx: Co-founder and CEO, 2006-13
- University of Pennsylvania Perelman School of Medicine: Adjunct Associate Professor, 2009-present; Senior Research Investigator, 1995-2009; Research Assistant Professor, 1989-95

**Education:**

- University of Szeged (Hungary): B.S., Biology, 1978; Ph.D., Biochemistry, 1982

**Key memberships/awards:**

- Breakthrough Prize: Breakthrough Prize in Life Sciences, 2022
- Novim (Kavil Institute, UC Santa Barbara): Alexandra Jane Noble Science Impact Award, 2021
- Research!America: Building the Foundation Award, 2021
- Albany Medical Center: Prize in Medicine and Biomedical Research, 2021
- Columbia University: Louissa Gross Horwitz Prize, 2021
- Vilcek Foundation: Vilcek Prize for Excellence, 2021

## 10 Things You Need to Know About

# Katalin Karikó

Inventor of Modified mRNA Used in COVID-19 Vaccines

U.S. PATENT NO. 8,278,036

1. Karikó was born in Szolnok, Hungary.
2. She was a postdoctoral fellow at the Uniformed Services University of the Health Sciences, Temple University and the Hungarian Academy of Sciences.
3. Karikó came to the University of Pennsylvania in 1989 and has served as a faculty member and researcher.
4. The adaptability of her co-invention of modified mRNA technology may serve as a key component for future mRNA-based therapies and vaccines.
5. Karikó is a founding member of the planning committee for the International mRNA Health Conference, an annual event started in 2013.
6. In her native Hungary, she has been awarded an honorary doctorate from the University of Szeged, and the Széchenyi Prize.
7. In 2020 Karikó was elected as a member of Academia Europaea.
8. Brandeis University awarded the Lewis S. Rosenstiel Award for Distinguished Work in Basic Medical Research to Karikó and Drew Weissman in 2020.
9. In 2021, she was recognized with the Wilhelm Exner Medal, awarded annually since 1921 to scientists and researchers who have had a direct impact on business and industry through their scientific achievements.
10. Karikó has 13 U.S. patents.



2022 NATIONAL INVENTORS  
HALL OF FAME INDUCTEE

**Born:** Sept. 7, 1959

**Primary Connections:**

- University of Pennsylvania Perelman School of Medicine: Director of Vaccine Research and Professor of Medicine, 1997-present
- RNARx: Co-founder, 2006-13
- National Institute of Allergy and Infectious Diseases: Senior Staff Fellow, Laboratory of Immunoregulation, 1993-97
- National Institutes of Health: Fellow, Allergy and Immunology, 1990-93

**Education:**

- Brandeis University: B.A. and M.A., Biochemistry/Enzymology, 1981
- Boston University: M.D. and Ph.D., Immunology/Microbiology, 1987

**Key memberships/awards:**

- Breakthrough Prize: Breakthrough Prize in Life Sciences, 2022
- Novim (Kavil Institute, UC Santa Barbara): Alexandra Jane Noble Science Impact Award, 2021
- Research!America: Building the Foundation Award, 2021
- Albany Medical Center: Prize in Medicine and Biomedical Research, 2021
- Columbia University: Louissa Gross Horwitz Prize, 2021

## 10 Things You Need to Know About

# Drew Weissman

Inventor of Modified mRNA Used in COVID-19 Vaccines

U.S. PATENT NO. 8,278,036

1. Weissman was born in Lexington, Massachusetts.
2. He was a fellow in allergy/immunology at the National Institutes of Health (NIH).
3. At the NIH, Weissman trained under National Institute of Allergy and Infectious Diseases Director Dr. Anthony Fauci.
4. His work has been published in more than 150 peer-reviewed articles.
5. Weissman is frequently featured on news programs, including CNN, ABC and BBC News, offering his expertise on infectious diseases and other public health issues.
6. He regularly trains both doctoral and undergraduate students in his lab, many of whom have gone on to hold prominent positions in academia, biotechnology and pharmaceutical companies.
7. Weissman serves on the scientific advisory boards of Arcturus Therapeutics, GreenLight Biosciences and Uvax Bio.
8. Brandeis University awarded the Lewis S. Rosenstiel Award for Distinguished Work in Basic Medical Research to Weissman and Katalin Karikó in 2020.
9. Weissman is an elected member of the Association of American Physicians.
10. He has 13 U.S. patents.



2022 NATIONAL INVENTORS  
HALL OF FAME INDUCTEE

**Born:** Nov. 4, 1942

**Died:** May 30, 2019

**Primary Connections:**

- UCLA, 1974-93: Faculty, Department of Ophthalmology, Jules Stein Eye Institute; Assistant Professor, Ophthalmology; Surgeon, UCLA Medical Center; Chair, Ophthalmology Residency Training Program; Assistant Professor, Surgery
- Charles R. Drew University College of Medicine and Science: Chair, Ophthalmology Residency Training Program (Drew-UCLA); Assistant Professor, Surgery
- American Institute for the Prevention of Blindness: Co-founder, 1976

**Education:**

- Hunter College: B.A., Chemistry, 1964
- Howard University: Medical Degree, 1968

**Key memberships/awards:**

- Alliance for Aging Research: Silver Innovator Award, 2018
- New York Academy of Medicine: John Stearns Medal for Distinguished Contributions in Clinical Practice, 2018
- U.S. National Library of Medicine: Changing the Face of Recognition, 2015
- Association of Black Women Physicians: Lifetime Achievement Award, 2013
- American Medical Women's Association (AMWA): International Women in Medicine Hall of Fame, 2001
- Howard University: Lifetime Achievement Award
- Alpha Kappa Alpha: Member

## 10 Things You Need to Know About

# Patricia Bath

## Laserphaco Cataract Surgery

U.S. PATENT NO. 4,744,360

1. In 1959, Bath received a grant from the National Science Foundation to attend the Summer Institute in Biomedical Science at Yeshiva University in New York, where she worked on a project studying the relationship between cancer, nutrition and stress.
2. She was one of Mademoiselle magazine's Ten Young Women of the Year for 1960, recognized in the January 1961 issue for cancer research she conducted at Harlem Hospital.
3. She attended Hunter College in New York and joined the Alpha Kappa Alpha sorority, a tie which she maintained throughout her life.
4. While attending Howard University College of Medicine, Bath was awarded the Edwin J. Watson Prize for Outstanding Student in Ophthalmology and mentored by Dr. Lois Jones. Also at Howard, she was an activist and student organizer, co-founded the Student National Medical Association and worked on the Poor People's Campaign.
5. From 1970-73, Bath was the first Black resident in ophthalmology at New York University's School of Medicine.
6. She was the first Black woman surgeon at the UCLA Medical Center. Bath also was the first female faculty member of the UCLA Jules Stein Eye Institute. At UCLA, she also founded the Ophthalmic Assistant Training Program (OATP) in 1978. OATP graduates provided screening, health education and support for blindness prevention strategies.
7. In 1976, she co-founded the American Institute for the Prevention of Blindness and coined the phrase Community Ophthalmology, which pushed for using public health approaches to eradicate preventable blindness.
8. When she received a patent for her laserphaco probe on May 17, 1988, Bath became the first Black female physician to receive a U.S. patent for a medical invention.
9. She received the Tribeca Film Festival Disruptive Innovation Award in 2012.
10. Bath was awarded five U.S. patents.





2022 NATIONAL INVENTORS  
HALL OF FAME INDUCTEE

**Born:** Nov. 25, 1844

**Died:** April 4, 1929

**Primary Connections:**

- Daimler-Benz AG: Board Member, 1926-29
- Carl Benz & Sons: Co-founder, est. 1906
- Benz & Co. Rhine Gas Engine Factory Mannheim: Co-founder, est. 1883

**Education:**

- Polytechnic University of Karlsruhe (now the Karlsruhe Institute of Technology): Mechanical Engineering Degree, 1864

**Key memberships/awards:**

- UNESCO Memory of the World Register: 2011
- European Automotive Hall of Fame: Inductee, 2001
- Automotive Hall of Fame: Inductee, 1984

## 10 Things You Need to Know About

# Carl Benz

## Inventor of the Modern Automobile

U.S. PATENT NO. 385,087

---

1. Benz was born in 1844 in Muhlburg, Germany (now Karlsruhe, Germany).
2. In 1883, Benz partnered with co-investors to establish Benz & Cie. Rheinische Gasmotorenfabrik Mannheim (Benz & Co. Rhine Gas Engine Factory Mannheim) to market a two-stroke engine he developed.
3. In January 1886, Benz filed for a German patent for a gasoline-powered three-wheeled vehicle, the first to combine an internal combustion engine with an integrated chassis.
4. In August 1888, Benz's wife Bertha, without her husband's knowledge, made a 100-mile roundtrip drive from Mannheim to Pforzheim with their two teenage sons. By the time they returned, the trip stirred publicity nationwide and proved the Benz automobile was suitable for long-distance travel.
5. By 1900, Benz & Cie. was the world's leading automobile manufacturer.
6. The Mercedes-Benz brand and Daimler trace their lineage back to Carl Benz's pioneering work.
7. Bertha Benz was inducted into the Automotive Hall of Fame in 2016.
8. Benz received an honorary degree from Karlsruhe Technical University in 1914.
9. In 2007, the Mechanical Engineering College of Karlsruhe Institute of Technology was named the Carl Benz School of Engineering.
10. Benz was awarded the Baden State Medal in 1928.



2022 NATIONAL INVENTORS  
HALL OF FAME INDUCTEE

**Born:** May 23, 1820

**Died:** March 8, 1887

**Primary Connections:**

- Academy of Science of St. Louis: Co-founder

**Key memberships/awards:**

- National Railroad Hall of Fame: Inductee
- National Rivers Hall of Fame: Inductee, 1986
- Hall of Fame for Great Americans: Inductee, 1920
- Royal Society of Arts (England): Albert Medal, 1884
- American Society of Civil Engineers: Vice President, 1882-83; Fellow, 1870
- American Association for the Advancement of Science: Fellow, 1879
- National Academy of Sciences: Elected Member, 1872

## 10 Things You Need to Know About

# James Buchanan Eads

## American Infrastructure and Defense

U.S. PATENT NOS. 83,942 & 170,832

1. Eads was born in 1820 in Lawrenceburg, Indiana.
2. As a young man, he traveled to Washington, D.C., and wrote in a letter home that he found the United States Patent Office “most absorbing.”
3. In 1842, Eads developed an adaptation of the diving bell and went into the salvage business.
4. Prior to the Civil War, he recognized the strategic importance of the Mississippi River and advanced the idea of ironclad boats.
5. The Academy of Science of St. Louis’ James B. Eads Award recognizes a distinguished individual for outstanding achievement in engineering or technology.
6. James B. Eads Hall at Washington University in St. Louis, Missouri, was erected in 1902-03 and was a gift to the university from his daughter, Eliza Ann Eads How.
7. In 1930, Villanova University’s School of Technology invited U.S. engineering deans to name the greatest engineers of all time. Eads ranked fourth in the voting, behind only James Watt, Leonardo da Vinci and Thomas Edison.
8. Eads’ story was told in PBS’ series “American Experience.” The episode, titled “Secrets of a Master Builder: How James Eads Tamed the Mighty Mississippi,” originally aired in October 2000.
9. He held more than 50 U.S. patents.
10. Eads died in 1887 in Nassau, Bahamas.