



NATIONAL INVENTORS
HALL OF FAME

INDUCTION CEREMONY

HONOR ◊ INSPIRE ◊ CHALLENGE

2024 Inductees

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2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: Aug. 7, 1948

Primary Connections:

- The University of Texas MD Anderson Cancer Center: Director, James P. Allison Institute; Regental Professor and Chair of the Department of Immunology; Olga Keith Weiss Distinguished University Chair for Cancer Research; Director, Parker Institute for Cancer Research; Executive Director, Immunotherapy Platform; 2012-present. Biochemist and Associate Professor, Department of Biochemistry, Science Park, Smithville, 1977-83
- Memorial Sloan-Kettering Cancer Center: Director, Ludwig Center for Cancer Immunotherapy, 2004-12
- University of California, Berkeley: Director, Department of Cancer Research Laboratory, 1985-2004

Education:

- The University of Texas at Austin: B.S., Microbiology, 1969; Ph.D., Biological Sciences, 1973

Key Awards:

- Nobel Prize in Physiology or Medicine, 2018
- Albany Medical Center Prize, 2018
- Warren Alpert Foundation Prize, 2017
- Wolf Prize Laureate in Medicine, 2017
- Harvey Prize, 2015
- Lasker-DeBakey Clinical Medical Research Award, 2015
- Breakthrough Prize in Life Sciences, 2014

10 Things You Need to Know About

James Allison

Immune Checkpoint Blockade Therapy

U.S. PATENT NO. 5,811,097

1. Allison was born in 1948 in Alice, Texas.
2. His sense of curiosity was sparked through reading, engaging in hands-on science experiments, and even accompanying his father, a family doctor, on house calls.
3. The possibility of developing better ways to treat cancer had been in Allison's mind since his youth, when he lost family members to cancer.
4. After graduating with a doctorate in biological sciences from The University of Austin at Texas, he was a research fellow at the Scripps Clinic and Research Foundation's Department of Molecular Immunology.
5. Among Allison's many honors are the Franklin Institute's Benjamin Franklin Medal in Life Science, the NAS Jessie Stevenson Kovalenko Medal for Outstanding Research in Medical Sciences, the American Cancer Society's Medal of Honor for Basic Research, the Tang Prize in Biopharmaceutical Science and the American Association of Immunologists' Lifetime Achievement Award.
6. In 2018, he won the Nobel Prize in Physiology or Medicine for his work.
7. Allison is a member of the National Academy of Medicine and the National Academy of Sciences.
8. Allison worked with Bristol-Myers Squibb to turn his lab discovery into a therapy to help treat cancer patients. The FDA approved Yervoy® (ipilimumab) in 2011 for treatment of patients with advanced melanoma.
9. Allison's love of music has led him to play harmonica for The Checkpoints, a blues band made up of immunologists and oncologists.
10. He has 12 U.S. patents.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: Sept. 30, 1966

Primary Connections:

- University of Cambridge: Professor of Medicinal Chemistry; Research Leader, Cancer Research UK Cambridge Institute; 1994-present
- Solexa (acquired by Illumina): Co-founder, 1998-2007

Education:

- University of Cambridge: B.A., Natural Sciences, 1988; Ph.D., Enzyme Chemistry, 1991

Key Memberships/Awards:

- National Academy of Sciences, International Member, 2023
- Breakthrough Prize in Life Sciences, 2022
- Millennium Technology Prize, 2020
- The Royal Society: Royal Medal, 2018; Fellow, 2012
- Academy of Medical Sciences: Fellow, 2011

10 Things You Need to Know About

Shankar Balasubramanian

Sequencing-by-Synthesis (SBS)

U.S. PATENT NO. 6,787,308

1. Balasubramanian was born in 1966 in Madras, India, and his family moved to the United Kingdom in 1967.
2. Spending much of his childhood in Cheshire playing soccer, he dreamed of pursuing the sport professionally.
3. After completing his doctorate in enzyme chemistry from the University of Cambridge, Balasubramanian was a SERC/NATO Research Fellow at Penn State University.
4. Thanks to his and David Klenerman's work, more than 1 million human genomes are sequenced each year.
5. Among his many honors, Balasubramanian has received the Breakthrough Prize in Life Sciences and the Millennium Technology Prize.
6. He is a fellow of the Royal Society and the Academy of Medical Sciences in the United Kingdom, and an international member of the National Academy of Sciences.
7. Balasubramanian was knighted in 2017 for his contribution to science and medicine.
8. When he was 50, he completed a 100-km (62.1-mile) ultramarathon.
9. "As a scientist, you're always driven by your curiosity," Balasubramanian said. "But deep down, you hope that one day you may play a part in something that makes a difference for other human beings."
10. He has 23 U.S. patents.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: Sept. 9, 1959

Primary Connections:

- University of Cambridge: Professor of Biophysical Chemistry, 1994-present; UK Dementia Research Institute, Group Leader
- Solexa (acquired by Illumina): Co-founder, 1998-2007
- BP Research: Laser Spectroscopy Group, 1987-94

Education:

- University of Cambridge: B.A., 1982; Ph.D., Chemistry, 1986

Key Memberships/Awards:

- Breakthrough Prize in Life Sciences, 2022
- Millennium Technology Prize, 2020
- The Royal Society: Royal Medal, 2018; Fellow, 2012
- Academy of Medical Sciences: Fellow, 2015

10 Things You Need to Know About

David Klenerman

Sequencing-by-Synthesis (SBS)

U.S. PATENT NO. 7,297,486

1. Born in 1959, Klenerman grew up in London.
2. While Klenerman engaged in many sports throughout his childhood, his father, a surgeon and professor, and his mother, a biological researcher, also placed an emphasis on education and the arts.
3. After completing his doctorate in chemistry in 1986 at the University of Cambridge, he was a Fulbright Scholar at Stanford University.
4. Thanks to Klenerman's and Shankar Balasubramanian's work, more than 1 million human genomes are sequenced each year.
5. He and Balasubramanian co-founded Solexa, which was acquired by Illumina.
6. Among his many honors, Klenerman has received the Breakthrough Prize in Life Sciences and the Millennium Technology Prize.
7. He is a fellow of the Royal Society and the Academy of Medical Sciences in the United Kingdom.
8. Klenerman was knighted in 2019 for services to science and for the development of high-speed DNA sequencing technology.
9. Klenerman is a group leader at the UK Dementia Research Institute at the University of Cambridge. His current research seeks to develop new insights on protein misfolding and neurodegenerative diseases.
10. He has nine U.S. patents.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: Jan. 13, 1960

Primary Connections:

- University of California, Berkeley: Eugene D. Commins Presidential Chair in Experimental Physics; Professor of Molecular and Cell Biology; 2018-present
- Howard Hughes Medical Institute: Investigator (UC Berkeley), Senior Fellow, Janelia Research Campus, 2018-present;
- Group Leader, Janelia Research Campus, 2005-2018
- Ann Arbor Machine Co.: Vice President of Research and Development, 1996-2002
- AT&T Bell Labs: Member of Technical Staff, 1988-94

Education:

- California Institute of Technology: B.S., Physics, 1983
- Cornell University: M.S., Applied Physics, 1985; Ph.D., Applied Physics, 1988

Key Memberships/Awards:

- National Academy of Sciences: Member, 2015
- Royal Society of Chemistry: Honorary Fellow, 2015
- Nobel Prize in Chemistry, 2014

10 Things You Need to Know About

Eric Betzig

Photoactivated Localization Microscopy (PALM)

U.S. PATENT NO. 7,535,012

1. Betzig was born in 1960 in Ann Arbor, Michigan.
2. He was a Boy Scout.
3. Betzig taught himself to program at age 12 when he spent Sunday mornings exploring the machine shop where his father worked.
4. He told the New York Times in 2015, "If there is one way I characterize myself, it's as an inventor. My father is that, too. He spent his life inventing and making tools for the automotive industry. I grew up around inventors."
5. Betzig and Harald Hess each invested \$25,000 to build a prototype of their PALM technology. They worked in Hess' living room and built a prototype in two months.
6. Zeiss received a license in 2007 from Betzig and Hess to commercialize PALM.
7. He shared the 2014 Nobel Prize in Chemistry with William E. Moerner and Stefan Hell for "super-resolved fluorescence microscopy."
8. Betzig is a co-founder and scientific adviser of Eikon Therapeutics
9. Among his many honors are Caltech's Distinguished Alumni Award and the AAAS Newcomb Cleveland Prize.
10. Betzig has 42 U.S. patents.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: Sept. 12, 1955

Primary Connections:

- Howard Hughes Medical Institute: Senior Group Leader, Janelia Research Campus, 2005-present
- KLA-Tencor: Director of Technology Programming, 1997-2005
- Bell Labs: Technical Staff Member
- MIT: Postdoc 1982-1986

Education:

- University of Chicago: B.S., Physics, 1977
- Princeton University: Ph.D., Physics, 1982

Key Memberships/Awards:

- National Academy of Sciences: James Prize in Science and Technology, 2023; Member, 2018
- American Association for the Advancement of Science: Fellow, 2016
- American Physical Society: Fellow, 1997

10 Things You Need to Know About

Harald Hess

Photoactivated Localization Microscopy (PALM)

U.S. PATENT NO. 7,535,012

1. Hess was born in 1955 in Cape Girardeau, Missouri.
2. He says that growing up in a small Midwest town taught him to be resourceful and creative.
3. As a child, Hess explored his physics interests via science projects, with resources from local shops, junkyards, libraries and the medical supplies catalogs from his father.
4. He continued exploring into his college years: "I didn't want to commit too early going into college to a particular direction. I opted to go to more of a liberal arts school and learn a little bit about history and economics without being committed to a particular field for a while."
5. Hess and Eric Betzig each invested \$25,000 to build a prototype of their PALM technology. They worked in Hess' living room and built a prototype in two months.
6. Zeiss received a license in 2007 from Hess and Betzig to commercialize PALM.
7. He did postdoctoral research on hydrogen atom trapping to make Bose-Einstein condensates, and his work on evaporative cooling of hydrogen contributed to the 2001 Nobel Prize in Physics, awarded to Eric Cornell, Wolfgang Ketterle and Carl Wieman for their achievement of Bose-Einstein condensates. With Betzig's Nobel Prize in Chemistry in 2014, Hess' work contributed to two Nobel Prizes in different fields.
8. Hess spent 8 years working in the hard disk drive semiconductor equipment industry before resigning to work with Betzig to explore new forms of microscopy..
9. He is a member of the National Academy of Sciences, fellow of the American Association for the Advancement of Science and the American Physical Society.
10. Hess has 31 U.S. patents.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: July 4, 1964

Primary Connections:

- Princeton University: Dean of Engineering and Applied Science; Professor of Electrical Engineering; 2020-present
- Plume Design Inc.: Co-founder, 2010
- Quantenna Communications Inc.: Co-founder, 2005
- Stanford University: Professor of Electrical Engineering, 1999-2020
- Memorylink Corp.: Chief Scientist, 1998-2002
- California Institute of Technology: Assistant Professor, 1994-98
- Bell Labs: Intern and Consultant, 1991-92
- University of California, Berkeley: Research Assistant, 1989-94
- MAXIM Technologies Inc.: Systems Engineer, 1986-90

Education:

- University of California, Berkeley: B.S., Engineering Mathematics, 1986; M.S., Electrical Engineering, 1991; Ph.D., Electrical Engineering, 1994

Key Memberships/Awards:

- IEEE James H. Mulligan Jr. Education Medal, 2024
- Silicon Valley Engineering Hall of Fame, 2024
- ACM SIGMOBILE Outstanding Contribution Award, 2022
- Marconi Society: Marconi Prize, 2020
- IEEE Eric E. Sumner Technical Field Award in Communications Technology, 2019

10 Things You Need to Know About

Andrea Goldsmith

Adaptive Beamforming for Multi-Antenna Wi-Fi

U.S. PATENT NO. 8,064,835

1. Goldsmith was born in 1964 in Berkeley, California, and grew up in Los Angeles.
2. She began taking junior college courses while in high school, and at age 17 she left school to travel through Europe. "Seeing my own country and culture through the eyes of others was transformative."
3. At Stanford University, Goldsmith led efforts to improve recruitment and retention of diverse faculty and students.
4. She was the first woman to receive the Marconi Prize since it was first awarded in 1975.
5. Goldsmith was appointed in 2021 to the President's Council of Advisors on Science and Technology (PCAST).
6. She co-founded Plume Design Inc. and Quantenna Communications Inc.
7. Goldsmith is on the corporate boards of Crown Castle, Intel Corp. and Medtronic Inc.
8. She is a member of the National Academy of Engineering, the American Academy of Arts and Sciences, and the Royal Academy of Engineering.
9. Goldsmith is the author of the highly influential textbook "Wireless Communications," published in 2005.
10. She has 38 U.S. patents.



2024 NATIONAL INVENTORS HALL OF FAME INDUCTEE

Born: Sept. 8, 1947

Primary Connections:

- University of California, Los Angeles: ECE Distinguished Adjunct Professor; Distinguished Scientist; 2011-present
- BEI Technologies Inc.: President, COO and Chief Technology Officer, 1992-2006
- Systron Donner Corp.: Chairman, President and CEO, 1975-92

Education:

- RCA Institutes Inc.: A.A.S., Electronics Technology Program, 1968
- University of California, Los Angeles: B.S., Electrical Sciences and Engineering, 1969; M.S., Electrical Sciences and Engineering, 1972
- California Coast University: Ph.D., Engineering, 1987
- Massachusetts Institute of Technology: Sloan School of Management, S.E., Program for Senior Executives, 1990

Key Memberships/Awards:

- John Fritz Medal, 2024
- Elmer E. Sperry Award, 2022
- IEEE: Medal of Honor, 2022
- Royal Academy of Engineering: Prince Philip Medal, 2022
- American Society of Mechanical Engineers: Soichiro Honda Medal, 2020
- Ellis Island Medal of Honor, 2016
- IET: J. J. Thomson Medal, 2015
- UCLA: Engineering Alumnus of the Year, 2004

10 Things You Need to Know About

Asad Madni

MEMS Gyroscope for Aerospace and Automotive Safety

U.S. PATENT NO. 7,360,422

1. Madni was born in 1947 in Mumbai, India, and grew up surrounded by an extended family who inspired and supported his love of learning.
2. As a child, he enjoyed studying English literature, math and science, as well as playing sports, carrom and chess, but his primary passion was for art, especially working in watercolors and charcoal.
3. “My definition of inventor is also an artist,” Madni said. “For complex problems, I try to look at the most elegant solution, and I always treat my solutions as artistic expressions.”
4. His career path was inspired in part by the proliferation of transistor radios across India and the world.
5. Madni’s recognitions by IEEE include the Medal of Honor, the Frederick Philips Award, the Millenium Medal, the Sensors Council Advanced Technical Achievement Award, the AESS Pioneer Award and the Industrial Innovation Award, the IMS Career Excellence Award, the IEEE HKN Eminent Member Recognition and the Vladimir Karapetoff Outstanding Technical Achievement Award, among others. He is an IEEE lifetime fellow.
6. IEEE HKN named its top award The Asad M Madni Outstanding Technical Achievement & Excellence Award to recognize and honor his nearly 50 years of technical and philanthropic accomplishments and visionary leadership. Tau Beta Pi established a Distinguished Alumni Award and Scholarship in his honor.
7. Madni is an elected member of the National Academy of Engineering and the European Academy of Sciences and Arts, and fellow of the Royal Academy of Engineering, Canadian Academy of Engineering, National Academy of Inventors, New York Academy of Sciences, Washington Academy of Sciences, Royal Aeronautical Society IET, AIMBE, SAE, AAAS, AIAA and AAIA.
8. He has been awarded honorary degrees from Ryerson University (D.Sc.), Technical University of Crete (D.Eng.), California State University, Northridge (Sc.D.), Universiti Kebangsaan Malaysia (Ph.D.), National Chiao Tung University (Ph.D.) and Tufts University (D.Eng.). He also has been awarded seven honorary professorships.
9. In the future, Madni says he intends to “bring together engineers, scientists, and technology and business leaders to utilize our moral compass, technical prowess and human understanding to convert current challenges into opportunities for a safer and a more just society.”
10. He has 28 U.S. patents.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: Dec. 13, 1955

Primary Connections:

- The Walt Disney Company: Disney Research Fellow; Senior Research Scientist; Head of Imagineering Research and Development; 1998-present
- Bell Labs: Executive Director, Information Networking Applications Research Department; Executive Director, Collaboratory on Information Infrastructure; Bellcore Fellow; 1978-98

Education:

- Columbia University: B.S., Electrical Engineering, 1978; M.S., Electrical Engineering

Key Memberships/Awards:

- Themed Entertainment Association: Master, 2020
- New Jersey Inventors Hall of Fame: Inventor of the Year, 1996
- Lewis Latimer Science Award, Oct. 18, 1996, from Metuchen-Edison Area NAACP
- 1995 Thomas Alva Edison Patent Award for “The Electronic Panning Camera” from the Research and Development Council of New Jersey
- R&D 100 Award for the “Electronic Panning Camera Research Prototype” from R&D Magazine, 1993
- US Black Engineer Magazine: Most Promising Engineer Award, 1987
- Popular Science, “The Best of What’s New” Award for “The VideoWindow Teleconferencing System” and for “The Electronic Panning Camera”

10 Things You Need to Know About

Lanny Smoot

Theatrical Technologies and Special Effects

U.S. PATENT NO. 7,273,280

1. Smoot was born in 1955 in New York City.
2. As a child, his STEM role models were from “Star Trek” (Uhura), and “Mission: Impossible” (Barney).
3. An early childhood memory: His father brought home a battery, an electric bell and a light bulb, and he wired them together so that the bell would ring, and the bulb would light. From then on, Smoot learned all he could about science and engineering.
4. He attended Brooklyn Technical High School and was named a Bell Labs Engineering Scholar, earning a full scholarship to Columbia University, summer work at Bell Labs and a guarantee of full-time work with the company after graduation.
5. At Bellcore, Smoot patented some of the very first fiber-optic technologies to be widely used in the Bell Telephone network, as well as developing and patenting early video streaming and teleconferencing systems. His Large-Screen Teleconferencing system was featured in the Smithsonian Institution’s “Information Age” exhibit, and his Bellcore VideoWindow system was demonstrated to Al Gore and Tom Tauke’s “Information Age” Congressional Subcommittee.
6. With 106 career patents so far, Smoot is Disney’s most prolific inventor. He has developed forward-thinking technologies that allow the company, and the theatrical community at large, to create cutting-edge experiences, illusions and entertainment.
7. He and his team patented an improved, realistic, extendable and retractable lightsaber that mimics movie special effects and another that enables theme park guests to battle a training droid and deflect laser blasts just as in the “Star Wars” movies. He also holds patents on large-scale interactive games, robotic eyes, new concepts for ride vehicles, creating free floating images, 3D without glasses and many more.
8. Since 2008, Smoot has been recognized four times by the Themed Entertainment Association, including three Thea Awards and being named a TEA Master in 2020.
9. Smoot has said: “I love technology in and of itself and being an individual contributor, but early on, I realized that each person has a special talent, sometimes multiple talents, but to be successful one needs to partner with other people who are good at what they do.”
10. Smoot has been featured in the “Breaking Barriers” exhibit at the National Inventors Hall of Fame® Museum.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: Jan. 21, 1972

Primary Connections:

- Harvard University (2001-present): Currently, David B. Arnold Professor of Science, Department of Chemistry and Chemical Biology, and Department of Physics
- Howard Hughes Medical Institute: Investigator, 2005-present

Education:

- University of Science and Technology of China: B.S., Physics, 1991
- University of California, Berkeley: Ph.D., Physics, 1996

Key Memberships/Awards:

- Dreyfus Prize in the Chemical Sciences, 2023
- Heinrich Wieland Prize, 2022
- J. Allyn Taylor International Prize in Medicine, 2022
- Lurie Prize in Biomedical Sciences, 2021
- Vilcek Prize in Biomedical Science, 2020
- Breakthrough Prize in Life Sciences, 2019
- NAS Award for Scientific Discovery, 2019
- Pearl Meister Greengard Prize, 2019
- Heineken Prize for Biochemistry and Biophysics, 2018
- MacArthur Foundation: Fellow, 2003

10 Things You Need to Know About

Xiaowei Zhuang

Stochastic Optical Reconstruction Microscopy (STORM)

U.S. PATENT NO. 7,776,613

1. Zhuang was born in 1972 in Rugao, Jiangsu, China.
2. Her parents are both professors — her mother in mechanical engineering and her father in fluid dynamics — at the University of Science and Technology of China.
3. Spending much of her time as a child reading historical novels, some particularly advanced for her young age, Zhuang says she strengthened her ability to focus.
4. After receiving her doctorate at the University of California, Berkeley, she completed a Chodorow Postdoctoral Fellowship at Stanford University under the mentorship of Nobel Prize recipient Steven Chu in 2001.
5. In 2009, Nikon Corp. obtained a license from Harvard University for STORM, and it introduced its N-STORM microscope in 2010.
6. Zhuang is the co-founder, and a scientific and technical advisory board member, at Vizgen Inc., a company that commercialized the MERFISH technology. Fellow National Inventors Hall of Fame Inductee David Walt also is a Vizgen co-founder.
7. She is on the editorial boards of several scientific journals, including *Science* and *Cell*.
8. Zhuang is an elected member of several academies, including the National Academy of Sciences, the National Academy of Medicine, the American Academy of Arts and Sciences, and the National Academy of Inventors.
9. Summarizing the motivation behind her work, she said, “I’m passionate about making scientific discoveries that advance our understanding of living organisms in nature, and hopefully improve human health. Importantly, I love to invent new tools to enable such discoveries.”
10. Zhuang has 14 U.S. patents.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: April 16, 1907

Died: Feb. 18, 1964

Primary Connections:

- L'Auto-Neige Bombardier Limitée, (Bombardier Snowmobile Ltd.): Founder and President, 1942-64; now Bombardier Inc.
- BRP (Bombardier Recreational Products)

Key Memberships/Awards:

- Canadian Manufacturing Hall of Fame, 2006
- International Snowmobile Hall of Fame, 1994
- Canadian Science and Engineering Hall of Fame, 1993
- International Snowmobile Racing Hall of Fame, 1989
- Canadian Business Hall of Fame, 1979

10 Things You Need to Know About

Joseph-Armand Bombardier

Snowmobile

U.S. PATENT NO. 3,023,824

1. Bombardier was born in 1907 in Valcourt, Quebec, Canada.
2. He opened an automobile garage and machine shop in Valcourt in 1926.
3. Bombardier took night school courses in mechanics and electrical engineering.
4. A segment of Canadian Highway 55 was designated Autoroute Joseph-Armand Bombardier in 2004.
5. The Canada Post has issued three postage stamps in honor of Bombardier or his snowmobiles.
6. In 1979, he was named the first Quebecer and French-Canadian inductee in the Canadian Business Hall of Fame.
7. The International Society for Terrain-Vehicle Systems named Bombardier a fellow member for life in 1981.
8. Since the invention of the Ski-Doo® snowmobile, an estimated 136,000 miles of signed and maintained snowmobile trails in North America have been developed by snowmobile clubs and associations.
9. Bombardier's legacy is celebrated in his hometown of Valcourt at the Musée de l'ingéniosité J. Armand Bombardier and through the Fondation J. Armand Bombardier philanthropic activities.
10. He had 16 U.S. patents.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: Sept. 22, 1853

Died: April 21, 1926

Primary Connections:

- U.S. House of Representatives, 1893-97

Education:

- University of South Carolina: 1874-77

10 Things You Need to Know About

George Washington Murray

Agricultural Machinery

U.S. PATENT NO. 517,960

1. Born enslaved in Sumter County, South Carolina, in 1853, Murray had lost both of his parents by the end of the Civil War in 1865.
2. Though he never received a formal primary education, he attended the University of South Carolina and the State Normal School in Columbia.
3. At the age of 18, Murray began teaching at a local school for the three months of the year that classes were held. He taught school for nearly 20 years.
4. In addition to working as a teacher, he became a landowner and a successful farmer — both of which were exceedingly rare among formerly enslaved people at the time.
5. In the early 1880s, Murray found inspiration for his inventions when he watched his wife work with sewing machine attachments in their home.
6. He was elected to the U.S. House of Representatives and served as the only Black representative in the 53rd and 54th Congresses, from 1893 until 1897.
7. Murray championed recognition of Black inventors and submitted into the Congressional Record a document from patent examiner Henry E. Baker. Known as “Baker’s List,” this document named 92 U.S. patents that had been granted to Black inventors.
8. After leaving Congress in 1897, he returned to his farm and invested in land.
9. U.S. Rep. James E. Clyburn of South Carolina is a distant relative of Murray.
10. He had nine U.S. patents.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: Nov. 1, 1850
Died: June 24, 1922

10 Things You Need to Know About

Mary Florence Potts

Cold-Handle Sad Iron

U.S. PATENT NOS. 103,501 & 113,448

1. Born Mary Florence Webber in 1850, Potts grew up in Iowa.
2. She was married and raising a young son in Iowa when she began developing a series of improvements to the sad iron.
3. Potts lacked the financial resources to manufacture and sell her invention on her own. She began working with third-party manufacturers who marketed Potts' invention as Mrs. Potts' Cold Handle Sad Iron, promoting the fact that a woman had designed it.
4. The irons were featured at the Centennial International Exhibition of 1876 in Philadelphia — the first official World's Fair in the United States.
5. When patent rights expired in the 1890s, many ironworks began to copy Potts' original sad iron design, and some advertised it as the Mrs. Potts Iron.
6. Mrs. Potts Irons were commonly used well into the 1930s, at which point they were surpassed in popularity by electric irons.
7. Today, Mrs. Potts Irons are sought after by antique dealers and collectors.
8. Potts continued to invent. In 1892, she and her husband, Joseph, received a patent (468,946) for their invention of a "Remedial or Medical Appliance," an early version of a heating pad.
9. A third inventor in the Potts family was Mary and Joseph's son, Oscero. He held patents for making optical lenses (1,332,410) and for a device for securing a cooking pot lid (1,722,394).
10. She had seven U.S. patents.



2024 NATIONAL INVENTORS
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Born: Aug. 25, 1917

Died: March 5, 2014

Primary Connections:

- Naval Air Development Center: Head, Biophysics and Bioastronautics Division, 1964-80; Head, Thermal Division, 1960-64; Special Technical Assistant to the Research Director, 1956-60; Research Physiologist, 1953-56
- Cornell University Medical College: Research Associate, Department of Physiology, 1946-53; Research Assistant, 1938-43

Education:

- Hunter College: B.A., Chemistry and Physics, 1938
- Cornell University Medical College: M.S., Physiology and Biophysics, 1948

Military Service:

- U.S. Naval Reserve, World War II

Key Memberships/Awards:

- Aerospace Medical Association: Fellow, 1974
- Aerospace Physiology Society: Paul Bert Award, 1972
- Presidential Award Citation for Innovation, 1972
- Society of Women Engineers: Achievement Award, 1969
- American Association for the Advancement of Science: Fellow, 1958

10 Things You Need to Know About

Alice Stoll

Fire-Resistant Fibers and Fabrics

U.S. PATENT NO. 3,148,531

1. Stoll was born in 1917 on Long Island, New York.
2. Enlisting in the U.S. Naval Reserve during World War II, she was on active duty from 1943 through 1946 before serving in the Reserve for the next 20 years.
3. In 1966, Stoll retired from the Naval Reserve with the rank of commander in the Medical Service Corps.
4. Her research into thermal burns made it possible to rate different materials for their ability to protect humans, and led directly to the development of the first protective clothing for Navy personnel that was inherently fire resistant, made with DuPont's Nomex®.
5. Today, Nomex is one of the most common fibers for making fire-protective clothing and meets standards established by industry associations and governments for workplace safety.
6. Nomex is used in protective apparel for military pilots, firefighters, racecar drivers and industrial workers who are exposed to hazards from flash fires and electrical arcs.
7. Stoll was chair of the board of the Heat Transfer in Biotechnology Technical Committee's Heat Transfer Division of the American Society of Mechanical Engineers.
8. In 1965, she was named Civil Servant of the Year by the Federal Business Association and Federal Personnel Council of Philadelphia.
9. Stoll was named a fellow of the Aerospace Medical Association and the American Association for the Advancement of Science.
10. She had two U.S. patents.



2024 NATIONAL INVENTORS
HALL OF FAME INDUCTEE

Born: Nov. 3, 1854

Died: July 22, 1922

Primary Connections:

- Sankyo Pharmaceutical Co. (now Daiichi-Sankyo Inc.): President
- Takamine Laboratory (acquired by Bayer): Founder
- Parke Davis: Consulting Chemist
- Tokyo Artificial Fertilizer Co. (now Nissan Chemical Corp.): Co-founder and Technical Director
- Japanese Patent Office: Temporary Chief, 1885
- Japan Ministry of Agriculture and Commerce, 1883-88

Education:

- University of Tokyo: Degree in Applied Chemistry, 1879; Ph.D., Chemical Engineering, 1899; Ph.D., Pharmacology, 1906

Key Memberships/Awards:

- Order of the Rising Sun, Fourth Class, 1915
- Japan Academy: Imperial Academy Prize, 1912

10 Things You Need to Know About

Jokichi Takamine

Adrenaline (Adrenalin®)

U.S. PATENT NO. 730,176

1. Takamine was born in 1854 in Takaoka, Toyama Prefecture, Japan.
2. His father was a doctor and his mother came from a family of sake makers.
3. In his native Japan, Takamine received the Japan Academy's Imperial Academy Prize, and the Order of the Rising Sun, Fourth Class.
4. He developed the digestive supplement Taka-Diastase. Patented in 1894, it was perhaps the world's first patent on a microbial enzyme, as well as the first commercially produced microbial enzyme in the U.S.
5. Takamine moved to the U.S. and began working for a distillery in Peoria, Illinois, where he used koji mold to make whisky.
6. In 1905 in New York City, he established the Nippon Club as a social club for Japanese Americans and Japanese nationals.
7. In 1912, Takamine supported efforts to beautify the tidal basin area around the Potomac River in Washington, D.C., by arranging for the shipment of several thousand cherry trees. After more than a century, these trees remain well-known symbols of friendship between Japan and the U.S.
8. He was the first president of Sankyo Pharmaceutical Co., now Daiichi-Sankyo.
9. A widely used medical device containing adrenaline (also called epinephrine) is the EpiPen® autoinjector, which was invented by Takamine's fellow National Inventors Hall of Fame® Inductee Sheldon Kaplan.
10. He had over 20 U.S. patents.



2024 NATIONAL INVENTORS HALL OF FAME INDUCTEE

Born: Aug. 17, 1890

Died: Feb. 15, 1982

Primary Connections:

- Perfect Circle Corp.: Assistant Engineer; VP of Engineering; President, Chairman

Education:

- University of Pennsylvania: B.S., Mechanical Engineering, 1912

Key Memberships/Awards:

- Automotive Hall of Fame: Inductee, 1988; Distinguished Service Citation Award, 1964
- Society of Automotive Engineers: Fellow, 1977; President, 1936; Indiana Section Chair, 1926-33
- American Society of Mechanical Engineers: Fellow, 1965
- Earlham College: Honorary Degree, 1965
- Indiana Institute of Technology: Honorary Doctorate, 1965

10 Things You Need to Know About

Ralph Teetor

Cruise Control

U.S. PATENT NO. 2,519,859

1. Teetor was born in 1890 in Hagerstown, Indiana.
2. When he was 5, one of his eyes was injured in an accident with a knife, and within a year he lost his sight in both eyes.
3. Teetor developed a heightened sense of touch, hearing and memory that would benefit him throughout his career.
4. His father and uncles trained him to be a machinist at a young age.
5. At just 12, Teetor designed and built a 3 hp motor car capable of reaching a speed up to 12 mph.
6. During his presidency at his family's business, Perfect Circle Corp., the company became a major defense contractor.
7. Serving as president of the Society of Automotive Engineers (SAE), Teetor became an influential supporter of automotive education. SAE International recognized his contributions by naming one of its most prestigious engineering awards after him – the Ralph R. Teetor Educational Award.
8. Earlham College dedicated the Ralph Teetor Planetarium in 1978.
9. When speaking about his lack of sight to veterans, Teetor said, "People will doubt your ability to do a job, but you must convince them that not only can you do that job, but also you can do it as well as anyone else."
10. Teetor was granted over 40 U.S. patents from 1923 to 1963.