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# NAE Members Honored by the White House with 2024 National Medals of Science, Technology

TUE, JANUARY 07, 2025

On Jan. 3, 2025, President Biden bestowed some of the nation’s most distinguished scientists and innovators with the nation’s highest honors for exemplary achievement and leadership in science and technology. Of the awardees, four recipients of the National Medal of Science and seven recipients of the National Medal of Technology and Innovation are members of the National Academy of Engineering (NAE). The honorees received their medals during a ceremony at the White House, where NAE President John Anderson joined the celebration.

NAE members Angela Maria Belcher, Emery Neal Brown, Ingrid Daubechies, and Cynthia Dwork were awarded the National Medal of Science for exemplary scientific contributions in service of the nation.

**Angela Marie Belcher**, the James Mason Crafts Professor of Biological Engineering and Materials Science and Engineering at MIT and a member of the Koch Institute for Integrative Cancer Research, was elected to the NAE in 2018 and to the National Academy of Sciences (NAS) in 2022. She was awarded the National Medal of Science for her innovative work blending biology and engineering to solve some of the world’s greatest challenges.

**Emery Neal Brown**, the Edward Hood Taplin Professor of Medical Engineering and Computational Neuroscience at MIT, is one of few individuals who have been elected to all three of the National Academies of Sciences, Engineering, and Medicine. He was elected to the National Academy of Medicine (NAM) in 2007, the NAS in 2014, and the NAE in 2015. Brown received the National Medal of Science for revolutionizing the field of anesthesia and revealing how it affects the brain.

**Ingrid Daubechies**, the James B. Duke Distinguished Professor Emerita of Mathematics at Duke University, was elected to the NAS in 1998 and to the NAE in 2015. She received the National Medal of Science for her pioneering work on signal processing.

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**Cynthia Dwork**, the National Academies Professor of Computer Science at Harvard University, was elected to the NAE in 2008 and to the NAS in 2014. She received the National Medal of Science for research that has redefined how technology protects privacy while ensuring fairness and building trust in the digital age.

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The National Medal of Technology and Innovation, which recognizes outstanding technological innovation and achievement in service of the nation, went to NAE members Martin Cooper, Eric R. Fossum, Paula T. Hammond, Kristina M. Johnson, Victor B. Lawrence, David R. Walt, and Paul G. Yock.

**Martin Cooper**, known as the “father of the cell phone,” was elected to the NAE in 2010. In 2013, he was honored by the NAE with the Charles Stark Draper Prize for Engineering. Cited in the Guinness Book of World Records for making the first cellular telephone call, Cooper spent much of his career at Motorola. He received the National Medal of Technology and Innovation for pioneering work that reshaped communication and the modern world.

**Eric R. Fossum**, the John H. Krehbiel Sr. Professor for Emerging Technologies at Dartmouth College, was elected to the NAE in 2013. He received the National Medal of Technology and Innovation for inventing the CMOS active pixel image sensor — more commonly known as the camera on a chip. The CMOS powers billions of devices, from smartphones and webcams to pill cameras and medical imaging.

**Paula T. Hammond**, MIT Institute Professor, vice provost for faculty, and member of the Koch Institute, also is among the exclusive few that have been elected to all three of the National Academies. She was elected to the NAM in 2016, the NAE in 2017, and the NAS in 2019. Hammond’s trailblazing work revolutionizing how medicines are delivered led to her receiving the National Medal of Technology and Innovation.

**Kristina M. Johnson**, former president of The Ohio State University, was elected to the NAE in 2016. She received the National Medal of Technology and Innovation for pioneering a new class of optoelectronics that have contributed to sustainable energy solutions and advanced manufacturing technologies. Her work has transformed lives, created new industries, and educated a workforce for the 21st century.

**Victor B. Lawrence**, research professor and director of the Center for Intelligent Networked Systems at Stevens Institute of Technology, was elected to the NAE in 2003. He was awarded the National Medal of Technology and Innovation for pioneering the shift from analog to digital networks, his work on submarine cables, high-definition TV, and digital video, and his contributions to early access of the Internet and mobile technologies.



The contributions of NAE members Eric Fossum and Martin Cooper bookend the development of the smartphone: Cooper's work led to the development of the handheld cellphone and Fossum to the camera on a chip.

**David R. Walt**, faculty member of the Wyss Institute at Harvard University, the Hansjörg Wyss Professor of Bioinspired Engineering at Harvard Medical School, and professor of pathology at Harvard Medical School and Brigham and Women’s Hospital, was elected to the NAE in 2008 and the NAM in 2016. In 2023, the NAE awarded him the Fritz J. and Dolores H. Russ Prize, which recognizes an outstanding bioengineering achievement in widespread use that improves the human condition. He was awarded the National Medal of Technology and Innovation for developing groundbreaking technologies that can detect nucleic acid proteins and small molecules. His work has transformed medicine, agriculture, and environmental science.

**Paul G. Yock**, emeritus faculty member at Stanford University and physician, was elected to the NAE in 2009. The organization awarded him with the Bernard M. Gordon Prize for Innovation in Engineering and Technology Education in 2018 and, together with others, the Fritz J. and Dolores H. Russ Prize in 2019. The National Medal of Technology and Innovation was awarded to him for inventing, developing, and testing new cardiovascular intervention devices, including the stent, which have reshaped cardiology and bioengineering.

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