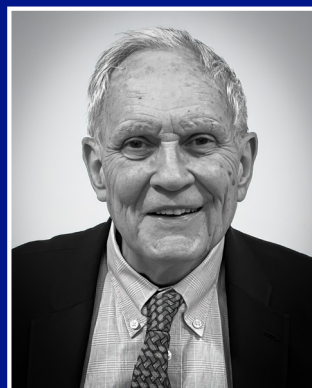
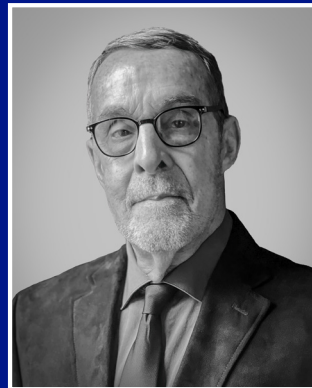
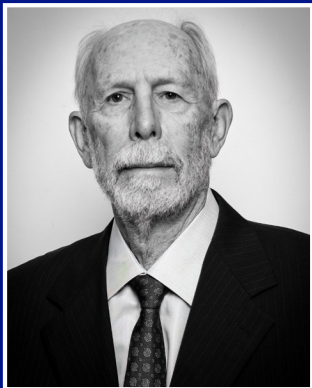


# NIST Gallery of Distinguished Alumni



**Celebrating Our 2025 Honorees**

**October 16, 2025**



National Bureau of Standards gate from Connecticut and Van Ness site



Descendant of Newton's apple tree on Gaithersburg campus

Sometime between 5 p.m. on Monday, June 7, and 12:45 p.m. on June 8, 2021 NIST's official Newton Apple Tree toppled over and died. This arboreal clone from the garden in which Isaac Newton saw an apple fall in 1666 has finally itself succumbed to gravity. Years ago, NIST made additional clones of our Newton Apple Tree and one will now become our "official" tree.

# **NIST Gallery of Distinguished Alumni**

## **Adding Eight Honorees to the Gallery**

**Thursday, October 16, 2025  
In-Person and Virtual Ceremony**

**11:00 am – 12:30 (EDT); 9:00 am – 10:30 am (MDT)**

Arranged by  
**STANDARDS ALUMNI ASSOCIATION**



**Jacqueline Calhoun, President  
Harry Hertz and Bettijoyce Lide  
Co-Chairs, Portrait Gallery Committee**



## History of the NBS/NIST Gallery

The Portrait Gallery had its origin in the framed photos of early NBS leaders that graced the walls of the Senior Lunch Club on the third floor of the South Building at the old site on Connecticut Avenue in Washington. These included well-known figures from early NBS history such as Harry Diamond, Hugh Dryden, W. W. Coblentz, William Hillebrand, and Edward Rosa. When the move to Gaithersburg took place in the mid-1960s, the portraits were moved to the new NBS Lunch Club, which was at the site of the present-day Heritage Room. In the early 1970s Director Lewis Branscomb proposed that these portraits form the beginning of a gallery to honor distinguished NBS alumni. When the lunch room was refurbished in 1985, the portraits were moved to the alcove just outside in the hallway.

In 1988 Director Ernest Ambler asked the SAA to oversee the creation of an up-to-date portrait gallery. SAA President Churchill Eisenhart organized a committee of senior retirees representing both technical and administrative areas. The other members of the original committee were Chester Page, Richard Cook, James Wright, Bascom Birmingham, Lawrence Wood, and Reeves Tilley. This committee announced the initial members of the NBS/NIST Gallery in 1988. This list of 79 NBS/NIST alumni included those whose portraits were already displayed in the alcove, as well as a number of more recent alumni.

Although the SAA continued a Portrait Gallery Committee to oversee the display of the portraits, a systematic procedure to add to the list of honorees was not established immediately. Except for the addition of 19 portraits in 1995, no further additions were made until Hans Oser, Ron Johnson, and Reeves Tilley reactivated the SAA committee in 1998. Since that time a formal induction ceremony has been held each year, including a reception for friends and family. Furthermore, in an effort led by Anneke Sengers, with the help of Ralph Hudson and David Lide, the SAA drew up selection criteria and established a procedure for soliciting nominations in a standard format, appointing a jury to evaluate the candidates, and deciding which ones to propose to the NIST Director for approval. The Portrait Gallery is now one of the SAA activities most visible to the NIST staff.

Today, the 390 portraits line both walls of the corridor. In addition, digital kiosks that contain all the portraits and biographies have been installed in both Gaithersburg and Boulder and are available for use by both staff and visitors. Furthermore, all the portraits and biographical material can be accessed via the Internet through the NIST Digital Archives.

--by David Lide

## SAA Portrait Gallery Committee 2025

Committee Co-Chairs ..... Harry Hertz and Bettijoyce Lide  
Digital Portrait Gallery ..... Jeffrey Horlick  
Subcommittees:  
    Nominations and Elections ..... Harry Hertz, Bettijoyce Lide, Barbara Uglik  
    Liaison with Honorees, Program Brochure ..... Noël Raufaste and Jeffrey Horlick  
    Portrait Ceremony and Advertising ..... Jeffrey Horlick and Richard M. Lindstrom

## 2025 Jury

Elaine Buntten-Mines  
Richard Gann  
Harry Hertz (non-voting)  
Bettijoyce Lide (non-voting)  
Richard Lindstrom

Roger Martin  
Willie May  
Jayne Orthwein  
Nancy Selepak

David Simons  
Barbara Uglik (non-voting)  
Lloyd Whitman  
David Wineland



# PROGRAM

**Opening Comments** ..... Jacqueline Calhoun, President, SAA

**Welcoming Remarks** ..... Craig Burkhardt, Acting Director, NIST

**Presentations** ..... Harry Hertz, Bettijoyce Lide, and John Lowe, Portrait Gallery Committee

**Robert E. Drullinger** PML Years at NBS/NIST: 1972-2002

For his essential role in the first demonstration of laser cooling of atoms, for the development of NIST-7, the first primary frequency standard using optical state selection and detection, and for impacts to the redefinition of the meter

**Richard H. F. Jackson** EL Years at NBS/NIST: 1971-2000

For his pioneering research and visionary leadership of NIST's manufacturing programs, which helped to transform manufacturing into a higher quality and dramatically more efficient information-driven enterprise

**Gregory J. Rosasco** PML Years at NBS/NIST: 1969-2000; 2002-2006

For excellence in research on the application of Raman spectroscopy to practical measurements and in the management of NIST technical divisions with the highest dedication

**Susannah B. Schiller** OISM Years at NBS/NIST: 1987-2020

For advancing statistical methods that improved accuracy in the characterization of SRMs and visionary leadership that modernized NIST's IT services positioning NIST to readily meet challenging federal mandates and advance NIST's mission priorities

**Annie J. Smith** CTL and Boulder Labs Years at NBS/NIST: 1989-2018

For exemplary contributions to NIST Boulder Laboratory administrative programs, overcoming Division and Organizing Unit boundaries, supporting NIST's goals

**Stephan J. Stranick** MML Years at NBS/NIST: 1996-2024

For world leadership in the execution of innovative microscopy techniques, programmatic leadership in other agency partnerships significant to national security, and a prodigious record of mentorship

**William H. Twilley** EL Years at NBS/NIST: 1978-2004

For realizing the most significant measurement achievement in fire science of the twentieth century, the measurement of heat release rate using oxygen consumption calorimetry

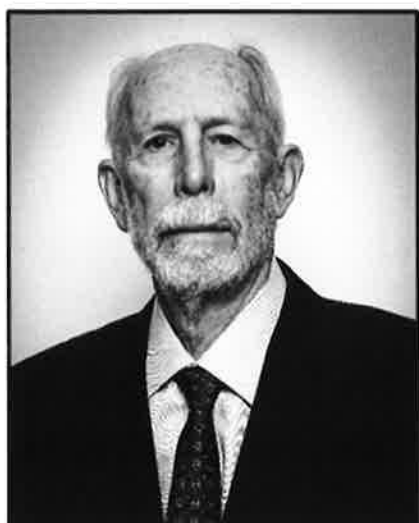
**Theodore V. Vorburger** PML Years at NBS/NIST: 1972-2009

For seminal contributions to the science and technology of surface metrology that underpin a broad range of industry relevant measurements, and provide a foundational scientific basis for firearm and toolmark forensics

**Closing Remarks and Acknowledgments** ..... Harry Hertz and Bettijoyce Lide







## **ROBERT E. DRULLINGER**

**NBS/NIST: Boulder 1972–2002**

**INDUCTED: 2025**

**B:** 1944, Lansing, Michigan

### **EDUCATION:**

Michigan State University, BS (Chemistry), 1967

Columbia University, PhD (Chemistry), 1972

**CITATION:** For his essential role in the first demonstration of laser cooling of atoms, for development of NIST-7, the first primary frequency standard using optical state selection and detection, and for impacts to the redefinition of the meter

### **POSITIONS HELD AT NBS/NIST:**

Presidential Intern, Quantum Electronics Division, Institute for Basic Standards (IBS), 1972-1973

NAS/NRC Postdoctoral Research Associate, Quantum Electronics Division, IBS, 1973-1974

Research Physicist, Time and Frequency Division, IBS/Center for Absolute Physical Quantities, National Measurement Laboratory (NML)/Center for Basic Standards, NML, 1974-1984

Leader, Atomic Beam Standards Group, Time and Frequency Division, NML/Primary Standards Group, Physics Laboratory (PL), 1984-2002

### **HONORS:**

U.S. Department of Commerce Silver Medal (1980)

U.S. Department of Commerce Gold Medal (1993)

IEEE I.I. Rabi Award (1996)

Japanese Ministry of Posts and Telecommunications Radio Days Award (1999)

International Timing & Sync Forum Time Lord Award (2016)

Constructed a copy of NIST-7 for the Communications Research Laboratory, Tokyo, Japan; NIST-7 is now on display in the Smithsonian Institution

Visiting research positions, including Max Planck Institute of Quantum Optics, Germany and Physics Department and LENS, University of Florence, Italy

### **PUBLICATIONS:**

More than 100 publications and two patents including:

Wineland, D.J., Drullinger, R.E., and Walls, F.L., "Radiation-Pressure Cooling of Bound Resonant Absorbers", *Physical Review Letters* 40, 1639-1642 (1978)

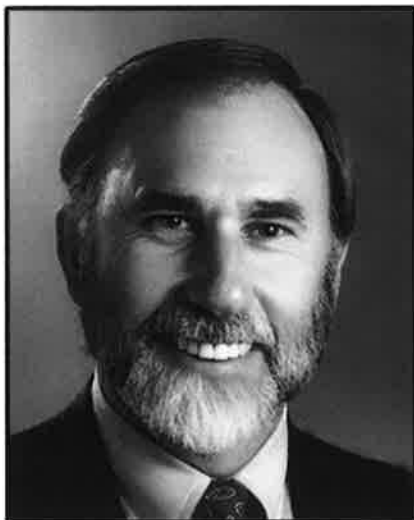
Drullinger, R.E., Wineland, D.J., and Bergquist, J.C., "High-Resolution Optical Spectra of Laser-Cooled Ions", *Applied Physics* 22, 365-368 (1980)

Wineland, D.J., Bergquist, J.C., Itano, W.M., and Drullinger, R.E., "Double-Resonance and Optical-Pumping Experiments on Electromagnetically Confined, Laser-Cooled Ions", *Optics Letters* 5, 245-247 (1980)

Jennings, D.A., Pollock, C.R., Peterson, F.R., Drullinger, R.E., Evenson, K.M., Wells, J.S., Hall, J.L., and Layer, H.P., "Direct Frequency Measurement of the I<sub>2</sub>-Stabilized He-Ne 473-THz (633-nm) Laser", *Optics Letters* 8, 136-138 (1983)

Shirley, J.H., Lee, W.D., and Drullinger, R.E., "Accuracy Evaluation of the Primary Frequency Standard NIST-7", *Metrologia* 38, 427-458 (2001)

Fox, P.J., Scholten, R.E., Walkiewicz, M.R., and Drullinger, R.E., "A Reliable, Compact, and Low-Cost Michelson Wavemeter for Laser Wavelength Measurement", *American Journal of Physics* 67, 624-630 (1999)



## **RICHARD H. F. JACKSON**

**NBS/NIST: 1971–2000**

**INDUCTED: 2025**

**B:** 1947, Baltimore, Maryland

**D:** 2024, Potomac, Maryland

### **EDUCATION:**

Johns Hopkins University, BA, (Applied Mathematics), 1969  
Southern Methodist University, MS, (Systems Engineering),  
1970

The George Washington University, DSc, (Operations  
Research), 1983

**CITATION:** For his pioneering research and visionary leadership of NIST's manufacturing programs, which helped to transform manufacturing into a higher quality and dramatically more efficient information-driven enterprise

### **POSITIONS HELD AT NBS/NIST:**

Operations Research Analyst, Mathematical Consultant, Project Leader, Applied Research Division, Institute for Basic Standards/Operations Research Division, Center for Applied Mathematics, National Engineering Laboratory (NEL), 1971-1986

Program Analyst, NEL, 1986-1987

Program Analyst, Program Office, Office of the Associate Director for Programs, Budget, and Finance, 1987-1988

Director, Manufacturing Technology Centers Program, 1988-1989

Deputy Director, Center for Manufacturing Engineering, NEL/Manufacturing Engineering Laboratory (MEL), 1989-1995

Director, MEL, 1995-2000

### **HONORS:**

NIST Bronze Medal (1989)

U.S. Department of Commerce Silver Medals (1991 and 1999)

*Engineering News-Record* "Top 25 Newsmakers of 2004"

CII James B. Porter, Jr. Technology Leadership Award, 2110

### **MEMBERSHIPS:**

Society of Manufacturing Engineers

Institute for Operations Research and Management Science

Production and Operations Management Society

International Mathematical Programming Society

American Association for the Advancement of Science

U.S. government delegate to the international committee that evaluated the feasibility and merits of the politically sensitive Intelligent Manufacturing Systems program proposed by Japan

International Steering Committee, IGES/PDES Organization

### **PUBLICATIONS:**

More than 100 publications including:

Jackson, R.H.F., *Disseminating Standards of Time and Frequency: Issues in the Evaluation of Alternative Systems*, NBS IR 78-874 (1978)

Jackson, R.H.F., Boggs, P.T., Nash, S.G., and Powell, S., "Guidelines for Reporting Results of Computational Experiments. Report of the ad hoc Committee", *Mathematical Programming* 49, 413–425 (1990)

Jackson, R.H.F., and Jones, A.W.T., "An Architecture for Decision Making in the Factory of the Future", *INFORMS Journal on Applied Analytics* Vol. 17, No. 6, 15-28 (1987)



## **GREGORY J. ROSASCO**

**NBS/NIST: 1969–2000; 2002–2006**

**INDUCTED: 2025**

**B:** 1943, East Rockaway, New York

### **EDUCATION:**

University of Scranton, BS, (Physics and Philosophy), 1964

Fordham University, MS, (Physics), 1966

Fordham University, PhD, (Physics), 1970

**CITATION:** For excellence in research on the application of Raman spectroscopy to practical measurements and in the management of NIST technical divisions with highest dedication

### **POSITIONS HELD AT NBS/NIST:**

NAS/NRC Postdoctoral Research Associate, Inorganic Materials Division, Institute for Materials Research (IMR), 1969-1971

Research Physicist, Inorganic Materials Division, IMR, 1971-1978

Program Analyst, Program Office, Office of the Associate Director for Programs, Budget, and Finance, 1978-1979

Research Physicist, Temperature Measurements and Standards Division, Center for Absolute Physical Quantities/Temperature and Pressure Division, Center for Basic Standards, National Measurement Laboratory (NML), 1980-1988

Leader, Optical Measurements Group, Chemical Process Metrology Division, Center for Chemical Technology, NML/Reacting Flows Group, Process Measurements Division, Chemical Science and Technology Laboratory (CSTL), 1988-1992

Chief, Process Measurements Division, CSTL, 1992-2000

Chief (Rehired Annuitant), Physical and Chemical Properties Division, CSTL, 2002-2006

### **HONORS:**

National Bureau of Standards Applied Research Award (1976)

U.S. Department of Commerce Silver Medals (1992 and 1999)

### **MEMBERSHIPS:**

ASTM Subcommittee E13.08 on Raman Spectroscopy (1974-78)

National Research Council, Numerical Data Advisory Board (1976-78)

National Steering Committee on Supercritical Water Oxidation (1994-1995)

Technical Advisory Committee on Thermal Treatment of Chemical Wastes (1994-97)

Industrial Advisory Board, Center for Process Analytical Chemistry, University of Washington (1997-2000)

### **PUBLICATIONS:**

More than 70 publications including:

Rosasco, G.J., Roedder, E., and Simmons, J.H., "Laser-Excited Raman Spectroscopy for Nondestructive Partial Analysis of Individual Phases in Fluid Inclusions in Minerals", *Science*, 190 (4214), 557-560 (1975)

Blaha, J.J., Rosasco, G.J., and Etz, E.S., "Raman Microprobe Characterization of Residual Carbonaceous Material Associated with Urban Airborne Particulates", *Applied Spectroscopy*, 32 (3), 292-297 (1978)

Rosasco, G.J., "Raman Microprobe Spectroscopy", *Advances in Infrared and Raman Spectroscopy*, Eds: R.J.H. Clarke and R.E. Hester, Vol. 7, 223-282, Heyden and Son Ltd., London (1980)

Rosasco, G.J. and Hurst, W.S., "Q Branch Line Shape Functions for CARS Thermometry", *Temperature: Its Measurement and Control in Science and Industry*, Vol. 6, 655-660, Ed: J.F. Schooley, Amer. Inst. Phys. (1992)

Bean, V.E., Bowers, W.J., Jr., Hurst, W.S., and Rosasco, G.J., "Development of a Primary Standard for the Measurement of Dynamic Pressure and Temperature", *Metrologia*, 30, 747-750 (1994)

Gillespie, W.D., Hahn, J.W., Bowers, W.J., Hurst, W.S., and Rosasco, G.J., "Broadband D<sub>2</sub> Coherent Anti-Stokes Raman Spectroscopy for Single-Shot Pressure and Temperature Determination with a Fabry-Perot Etalon", *Applied Optics*, 38 (3), 534-544 (1999).



## **SUSANNAH B. SCHILLER**

**NBS/NIST: 1987–2020**  
**INDUCTED: 2025**

**B:** 1962, Grove City, Pennsylvania

### **EDUCATION:**

College of Wooster, BS, (Mathematics and Computer Science),  
1984  
University of Illinois Urbana-Champaign, MS, (Statistics), 1986

**CITATION:** For advancing statistical methods that improved accuracy in the characterization of SRMs and visionary leadership that modernized NIST's IT services positioning NIST to readily meet challenging federal mandates and advance NIST's mission priorities

### **POSITIONS HELD AT NBS/NIST:**

Statistician, Statistical Engineering Division, Center for Computing and Applied Mathematics, National Engineering Laboratory/Computing and Applied Mathematics Laboratory, 1987-1996  
Program Analyst, Program Office, Office of the Director, 1996-1997  
Special Assistant to Director, Advanced Technology Program, 1997-2000  
Leader, Information Resources Group, Advanced Technology Program, 2000-2003  
Deputy Chief Information Officer, Office of the Chief Information Officer/ Office of Information Systems Management, (OISM), 2003-2020  
Chief Privacy Officer, OISM, 2019-2020

### **SIGNIFICANCE OF WORK;**

Ms. Schiller as NIST's Chief Privacy Officer and Deputy Chief Information Officer leveraged valuable relationships with senior management across NIST and with IT support staff in NIST's organizational units. NIST's Enterprise Risk Management profile benefitted from Ms. Schiller's holistic view of enterprise risk for the NIST IT systems that process personally identifiable information. She ensured that NIST maintained CIO autonomy by compiling NIST's first Federal Information Technology Acquisition Reform Act (FITARA) scorecard replete with compelling evidence showing NIST's overall IT budget, program, and security management practices. This merited the Commerce CIO delegating the agency's authority for IT leadership, strategic planning, workforce, budgeting, investment management, information security and planning to the NIST CIO. She spearheaded NIST policy to create a Privacy program that addressed compliance requirements and recognized NIST's unique programmatic mission requirements. By collaborating with each NIST OU to establish a Privacy Liaison role and instituting supportive efforts, Ms. Schiller ensured that NIST's privacy metrics were meaningful and attainable. Prior to her CIO responsibilities, Ms. Schiller developed a method for combining data from independent analytical methods and used the method to characterize SRMs produced by MML's analytical chemists. She developed one of the first electronic proposal submission systems with digital signatures that enabled NIST's Advanced Technology Program Managers to review proposals, track funding and deliverables for ATP projects, and assess economic impacts by providing tailored IT capabilities. In addition to serving in NIST's mentoring program, Ms. Schiller supervised and supported career-enhancing opportunities for multiple staff who have gone on to assume significant leadership positions across NIST, including a NIST CIO.

### **HONORS:**

NIST Bronze Medal (1991)  
NIST George A. Uriano Award (2002)

### **MEMBERSHIPS:**

Represented NIST on the DOC Chief Information Officer and Privacy Councils  
Served as Detailee in the role of Chief Information Officer to NTIS  
Served as a board member of the NIST Child Care Center (1991-1994)



## **ANNIE J. SMITH**

**NBS/NIST: 1989–2018**  
**INDUCTED: 2025**

**B:** 1943, Morristown, Tennessee

### **EDUCATION:**

Attended the University of Tennessee and East Tennessee State University

**CITATION:** For exemplary contributions to NIST Boulder Laboratory administrative programs, overcoming Division and Organizing Unit boundaries, supporting NIST's goals

### **POSITIONS HELD AT NBS/NIST:**

Secretary, Microwave Metrology Group, Electromagnetic Fields Division, Center for Electronics and Electrical Engineering, National Engineering Laboratory/Electronics and Electrical Engineering Laboratory (EEL), 1989-1993

Division Secretary and Office Assistant, Electromagnetic Technology Division, EEL, 1993-1994

Division Secretary and Office Assistant, Optoelectronics Division, EEL, 1994-2008

Executive Assistant to the NIST Boulder Laboratory Director, 2009-2014

Executive Assistant to the Director of NIST Communications Technology Laboratory and to the NIST Boulder Laboratory Director, 2014-2018

### **SIGNIFICANCE OF WORK;**

Annie Smith's extraordinary contributions to NIST spanned decades and Organizational Units. She advanced the NIST mission, supporting the work and touching the lives of virtually every staff member in the Boulder Labs and many in Gaithersburg. Ms. Smith served as the institutional memory and go-to administrative lead for Boulder. She solved campus-wide problems, generously provided help to anyone who asked, and kept Boulder operating smoothly. For example, in 2008, NIST faced an existential catastrophe after a plutonium spill in Boulder. Ms. Smith served as the NIST's Chief Scientist's primary aide arranging meetings, briefings, and teleconferences; preparing a wide variety of official correspondence, reports, and documents; and tracking requests, responses to requests, and numerous time-sensitive action items for the NRC, all of which were critically important to NIST's successful response and reputational rehabilitation. In 2010, Ms. Smith proactively addressed the coordination of visitor requests under new NIST-Boulder security requirements, greatly enhancing Boulder's ability to continue hosting foreign visitors. She was a source of corporate knowledge and as a problem solver, organized NIST Boulder social activities, and ensured that NIST staff, associates and visitors were provided the appropriate level of support and respect. Ms. Smith's impact on key NIST priorities has been extraordinary and lasting. She was a quintessential enabler. She was a primary administrative resource for NIST-Boulder, as assistant to Director, Boulder Laboratories; played a critical role as administrative coordinator during response to plutonium spill incident; and revamped administrative processes for NIST Boulder Laboratories, and NIST's Communication Technology Laboratory's Manual.

### **HONORS:**

NIST Eugene Casson Crittenden Award (2012 and 2018)



## **STEPHAN J. STRANICK**

**NBS/NIST: 1996–2024**

**INDUCTED: 2025**

**B:** 1962, Quakertown, Pennsylvania

**D:** 2024, Hanover, Pennsylvania

### **EDUCATION:**

Ithaca College, BS, (Chemistry), 1989

The Pennsylvania State University, PhD (Chemistry), 1994

**CITATION:** For world leadership in the execution of innovative microscopy techniques, programmatic leadership in other agency partnerships significant to national security, and a prodigious record of mentorship

### **POSITIONS HELD AT NBS/NIST:**

Research Chemist, Surface and Microanalysis Science Division, Chemical Science and Technology Laboratory/Material Measurement Laboratory (MML), 1996-2012

Leader, Microanalysis Research Group/Microscopy and Microanalysis Research Group, Materials Measurement Science Division, MML, 2012-2015

Research Chemist, Materials Measurement Science Division, MML, 2015-2024

Paperwork for him to become a Fellow had been approved by NIST at the time of his death, 2024

### **HONORS:**

American Chemical Society 100 New Voices in Chemistry (2001), Arthur F. Findeis Award (2003)

American Chemical Society and the German Chemical Society Frontiers of Chemistry: Top 40 under 40 (2002)

NIST Bronze Medals (2002 and 2024)

NIST Samuel Wesley Stratton Award (2002)

Arthur S. Flemming Award (2008)

U.S. Department of Commerce Gold Medal (2023)

### **MEMBERSHIPS:**

Symposium organization for American Chemical Society, Materials Research Society, Federation of Analytical Chemistry and Spectroscopy Societies, Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, and Optical Society

American Chemical Society, Assessment Committee for the *Technology Vision 2020* report

National Academy of Sciences, Committee on Revealing Chemistry Through Advanced Chemical Imaging

### **PUBLICATIONS:**

More than 90 publications and seven patents including:

Novotny, L., and Stranick, S.J., “Near-Field Optical Microscopy and Spectroscopy with Pointed Probes”, *Annual Review of Physical Chemistry* 57, 303-331 (2006)

Beverluis, M.R., Novotny, L., and Stranick, S.J., “Programmable Vector Point-Spread Function Engineering”, *Optics Express* 14, 2650-2656 (2006)

Kim, H., Bryant, G.W., and Stranick, S.J., “Superresolution Four-Wave Mixing Microscopy”, *Optics Express* 20, 6042-6051 (2012)

Beams, R., Cançado, L.G., Krylyuk, S., Kalish, I., Kalanyan, B., Singh, A.K., Choudhary, K., Bruma, A., Vora, P.M., Tavazza, F., Davydov, A.V., and Stranick, S.J., “Characterization of Few-Layer 1T' MoTe<sub>2</sub> by Polarization-Resolved Second Harmonic Generation and Raman Scattering”, *ACS Nano* 10, 9626-9636 (2016)



## **WILLIAM H. TWILLEY**

**NBS/NIST: 1978–2004**  
**INDUCTED: 2025**

**B:** 1947, Washington, D.C.  
**D:** 2015, Pendleton, South Carolina

### **EDUCATION:**

University of Maryland, BS (Agricultural Engineering), 1971

**CITATION:** For realizing the most significant measurement achievement in fire science of the twentieth century, the measurement of heat release rate using oxygen consumption calorimetry

### **POSITIONS HELD AT NBS/NIST:**

Engineering Technician, Fire Safety Engineering Division/Fire Performance Evaluation Division/Fire Measurement and Research Division, Center for Fire Research, National Engineering Laboratory, 1978-1991  
Engineering Technician, Fire Measurement and Research Division/Fire Safety Engineering Division/Fire Research Division, Building and Fire Research Laboratory, 1991-2004

### **SIGNIFICANCE OF WORK:**

For over two decades, Mr. Twilley played a pivotal role in the design and implementation of the most significant fire measurement achievement of the twentieth century, the ability to measure heat release rate using oxygen consumption calorimetry. Through his exceptional skill, Mr. Twilley transformed the idea of oxygen consumption calorimetry from a theoretical principle into a practical, widely adopted method. From the 1970s through the 1990s, Mr. Twilley collaborated with a diverse group of scientists and engineers to develop a technique for quantifying heat release rate – a key metric for assessing fire hazard. Mr. Twilley designed tests to study and define the limitations of the instrument and independently executed those experiments. Mr. Twilley developed the Cone Calorimeter for Controlled Atmosphere Studies that could operate in an oxygen-depleted environment, simulating the conditions of a fully-developed room and contents fire, and measure the consequences of those conditions on material flammability, including the heat release rate, and toxic gas and soot production. Mr. Twilley provided support to other federal government agencies that sought to build the instrument. Currently, more than 300 laboratories and universities worldwide use cone calorimeters based on Mr. Twilley's design. Mr. Twilley also provided critical contributions to a multi-agency, international research program for cleaning up oil spills by providing outstanding technical design, fabrication, and operations support for full-scale crude oil/diesel fuel fire experiments, including instrumentation for gas-phase measurement of combustion effluent in the atmosphere using an instrument-laden tethered blimp. The work led to the establishment of *in situ* burning as a tool to reduce the negative impact of oil spills on sensitive marine environments. His work assisted the industry in developing improved fire-resistant oil containment booms and more advanced technology to monitor airborne smoke and particles. An ASTM standard was developed based on this work. Throughout his career, Mr. Twilley was highly respected as a researcher, and his opinion was sought by scientists and engineers alike for his design ingenuity and troubleshooting acumen.

### **HONORS:**

NIST Bronze Medal (1984)  
R&D 100 Award (1988)  
NIST Safety Award (1990)  
Lecturer, University of Tokyo on the cone calorimeter (1993)  
U.S. Department of Commerce Silver Medal (2002)

### **PUBLICATIONS:**

More than 50 publications including:

Twilley, W.H., and Babrauskas, V., *User's Guide for the Cone Calorimeter*, NIST SP-745 (1988)



## **THEODORE V. VORBURGER**

**NBS/NIST: 1972–2009**  
**INDUCTED: 2025**

**B:** 1944, New York City, New York

### **EDUCATION:**

Manhattan College, NY, BS (Physics), 1965  
Yale University, MS (Physics), 1966 Yale University, PhD (Physics), 1969

**CITATION:** For seminal contributions to the science and technology of surface metrology that underpin a broad range of industry relevant measurements, and provide a foundational scientific basis for firearm and toolmark forensics

### **POSITIONS HELD AT NBS/NIST:**

Physicist, Optical Physics Division, Institute for Basic Standards (IBS), 1972-1976  
Physicist, Mechanics Division, IBS/Mechanical Processes Division and Mechanical Production Metrology Division, Center for Mechanical Engineering and Process Technology, National Engineering Laboratory (NEL), 1976-1987  
Leader, Surface and Particle Metrology Group, Precision Engineering Division, Center for Manufacturing Engineering, NEL/Manufacturing Engineering Laboratory (MEL) Laboratory, 1987-1993  
Program Analyst, Program Office, Office of the Director, 1993-1994  
Leader, Surface and Microform Metrology Group, Precision Engineering Division, MEL, 1994-2009  
Acting Deputy Director, Center for Nanoscale Science and Technology, 2007-2008  
Guest Researcher, Physical Measurement Laboratory, 2009-Present

### **HONORS:**

U.S. Department of Commerce Silver Medal (1992)  
NIST William P. Slichter Award (1993)  
NIST Bronze Medal (1994)  
NIST Edward Bennett Rosa Award (1996)  
American Society of Mechanical Engineers Dedicated Service Award (2012)  
PML Distinguished Associate Award (2019)

### **MEMBERSHIPS:**

American Physical Society ASME Committee B46 on the Classification and Designation of Surface Qualities, Chair 1986-1993  
U.S. Delegate and Subject Matter Expert, International Organization for Standardization (ISO) TC 213 Organization of Scientific Area Committees for Forensic Science

### **PUBLICATIONS:**

More than 200 publications including:  
Vorburger, T.V. and Teague, E.C., "Optical Techniques for On-Line Measurement of Surface Topography", *Precision Engineering* 3, 61-83 (1981)  
Church, E.L., Vorburger, T.V., and Wyant, J.C., "Direct Comparison of Mechanical and Optical Measurement of the Finish of Precision Machined Optical Surfaces", *Optical Engineering* 24, 388-395 (1985)  
Vorburger, T.V., Dagata, J.A., Wilkening, G., and Iizuka, K., "Industrial Uses of STM and AFM", *Annals of the CIRP* 46/2, 597-620 (1997)  
Rhee, H., Vorburger, T.V., Lee, J.W., and Fu, J., "Discrepancies between Roughness Measurements Obtained with Phase-Shifting and White-Light Interferometry", *Applied Optics* 44, 5919-5927 (2005)  
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## Name, Tenure, Year Inducted into Gallery

Abramowitz, Milton	1938-1958	1995
Achenbach, Paul R.	1937-1979	1995
Albus, James S.	1973-2008	2009
Alexander, Samuel N.	1946-1967	1988
Allan, David W.	1960-1992	1995
Appel, William D.	1922-1959	N/A
Arif, Muhammad	1988-2018	2019
Armstrong, George T.	1951-1982	2002
Bailey, Dana K.	1947-1955 & 1959-1965	2003
Ballou, Susan M.	2000-2020	2022
Barbrow, Louis E.	1921-1969	1988
Barnes, James A.	1957-1983	1995
Bates, Phaon H.	1910-1945	2006
Bates, Roger	1939-1969	1988
Baum, Howard	1975-2006	2007
Bay, Zoltan L.	1955-1972	2006
Beall, James A.	1982-2021	2022
Bean, Howard S.	1917-1958	2007
Beatty, Robert W.	1948-1974	2001
Beckett, Charles	1950-1976	N/A
Belecki, Norman B.	1970-1999	2020
Bennett, Herbert S.	1966-2015	2021
Bennett, John A.	1936-1976	1995
Bennett, Lawrence	1958-1996	2000
Bentz, Dale P.	1980-1987 & 1988-2018	2019
Berger, Martin J.	1952-1988	2001
Berger, Patricia W.	1976-1978 & 1979-1992	2006
Bergquist, James	1978-2013	2013
Bertocci, Ugo	1971-1992	2013
Birmingham, Bascom W.	1951-1982	1988
Birnbaum, George	1946-1956 & 1975-1995	2000
Blanch, Gertrude	1938-1954	2017
Blum, William	1909-1952	1988
Boettinger, William	1972-2011	2012
Brady, Edward L.	1963-1987	1988
Branstad, Dennis K.	1973-1994	2002
Brenner, Abner	1930-1971	1988
Brickwedde, Ferdinand G.	1925-1956	1988
Brode, Wallace R.	1923-1928 & 1947-1958	1988

## Name, Tenure, Year Inducted into Gallery

Broida, Herbert P.	1949-1963	1988
Brombacher, William G.	1922-1954	1988
Brown, Frederick W.	1954-1962	1988
Buckingham, Edgar	1906-1937	2006
Bunten-Mines, Elaine	1968-1997	2010
Burrows, James H.	1979-1995	1999
Cage, Marvin E.	1976-2005	2014
Cahn, John W.	1977-2006	2007
Cali, J. Paul	1966-1978	1995
Cameron, Joseph M.	1947-1977	2002
Carpenter, B. Stephen	1964-2005	2007
Carpenter, Robert J.	1955-1992	1999
Carr, Kevin	1989-2005	2014
Carter, Robert S.	1958-1989	2003
Cassidy, Esther C.	1955-1997	1999
Caswell, Randall S.	1952-1994	1999
Cavanagh, Richard R.	1979-2019	2021
Celotta, Robert J.	1971-2017	2018
Cezairliyan, Ared	1963-1997	2015
Chapman, Robert E.	1975-2016	2018
Clark, Alan F.	1964-2004	2011
Clark, Charles W.	1981-1983 & 1984-2022	2023
Coblentz, William W.	1905-1944	1988
Collins, Belinda L.	1974-2012	2021
Colvin, Burton H.	1972-1991	2002
Cook, Richard K.	1935-1966 & 1971-1976	2006
Costrell, Louis	1946-1987	2006
Coursey, Bert M.	1972-2011	2016
Crittenden, Eugene C.	1909-1950	1988
Croarkin, M. Carroll	1955-1963 & 1973-2000	2013
Cullen, William C.	1948-1981	2002
Currie, Lloyd A.	1962-2000	2004
Curtis, Harvey L.	1907-1946	1988
Curtiss, John H.	1946-1953	1988
Curtiss, Leon F.	1926-1961	2003
Cutkosky, Robert D.	1955-1991	2015
Day, Gordon W.	1969-2003	2004
Dellinger, J. Howard	1907-1948	1988
Deprit, Andre	1979-2003	2007

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## Name, Tenure, Year Inducted into Gallery

Deslattes, Richard D.	1962-2001	2002
Diamond, Harry	1927-1948	1988
Didion, David A.	1960-1962 & 1971-2002	2007
Digges, Thomas G.	1920-1962	1998
DiMarzio, Edmund A.	1963-1998	2004
Dodson, Donna F.	1987-1999 & 2003-2020	2021
Domanski, Piotr A.	1983-2022	2023
Dorsey, N. Ernest	1903-1920 & 1928-1943	1988
Dowd, Ellen	1967-1973 & 1980-2006	2010
Driscoll, Raymond L.	1936-1971	2016
Drullinger, Robert E.	1972-2002	2025
Dryden, Hugh L.	1918-1947	1988
Dunfee, Bernadine	1943-1976	2002
Dunmore, Francis W.	1918-1949	1988
Dunn, Gordon	1961-2002	2010
Durst, Richard A.	1963-1990	2009
Dziuba, Ronald F.	1961-2000	2007
Eberhardt, Keith	1978-2000	2009
Eby, Ronald K.	1963-1984	2003
Edmonds, Jack R.	1959-1969	2014
Egelhoff, William F.	1979-2010	2011
Eisenhart, Churchill	1946-1983	1988
Ekin, John (Jack)	1973-2007	2013
Embree, Edward	1970-2005	2023
Engen, Glenn F.	1954-1986	2001
Evenson, Kenneth M.	1963-2001	2002
Fanney, A. Hunter	1977-2017	2018
Fano, Ugo	1946-1966	1988
Fickett, Frederick R.	1967-2003	2007
Fields, Richard J.	1977-2004	2009
Filla, B. James	1982-2021	2023
Filliben, James J.	1969-2022	2023
Fischer, Louis A.	1901-1921	1988
Fletcher, Donald G.	1951-1985	2002
Foote, Paul D.	1911-1927	1988
Franzen, Douglas L.	1970-1997	1999
Frederikse, Hans P. R.	1953-1996	2006
French, Judson C.	1948-1999	2001
Frohnsdorff, Geoffrey J.	1973-2002	2005

## Name, Tenure, Year Inducted into Gallery

Furlani, Cita	1981-2012	2013
Furukawa, George T.	1948-1985	2003
Gadzuk, J. William	1968-2008	2009
Gann, Richard	1976-2012	2013
Gardner, Irvine C.	1921-1959	1988
Garner, Ernest L.	1958-2000	2021
Gary, Thomas A.	1962-2000	2005
Gebbie, Katharine B.	1968-2016	2016
Gibson, Kasson	1916-1955	N/A
Gilliland, Gary L.	1986-2005	2018
Glenn, K. Robert	1987-2020	2021
Glinka, Charles	1975-2007	2012
Goldberg, Robert N.	1969-2008	2016
Green, Melville	1954-1968	2010
Greenberg, Robert R.	1976-2008	2016
Greenspan, Martin	1935-1974	2000
Gross, John L.	1983-2016	2020
Guildner, Leslie A.	1959-1982	2016
Hall, John L.	1961-2004	2005
Haller, Wolfgang	1958-1984	2017
Hamer, Walter J.	1935-1970	1988
Hamilton, Clark A.	1971-1999	2004
Han, Charles C.	1974-2002	2004
Handwerker, Carol A.	1984-2005	2006
Harman, Donna K.	1988-2005	2015
Harman, George G.	1950-2003	2004
Harris, Forest K.	1925-1971	1988
Harris, Milton	1931-1944	1988
Harris, Richard E.	1975-2006	2008
Haynes, William M.	1970-2003	2005
Hayward, Evans	1950-1990	1995
Hayward, Raymond	1950-1986	N/A
Hebner, Robert E.	1972-1999	2004
Heinrich, Kurt F. J.	1964-1988	2008
Hermach, Francis L.	1939-1976	2001
Hertz, Harry S.	1973-2013	2014
Heydemann, Peter L. M.	1964-2001	2004
Heyl, Paul R.	1920-1942	1988
Heyman, Matthew	1978-2008	2010
Hill, James E.	1972-2007	2008

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## Name, Tenure, Year Inducted into Gallery

Hillebrand, William F.	1908-1925	1988
Hilsenrath, Joseph	1948-1974	2003
Hines, Verna Brown	1975-2006	2011
Hinman, Wilbur S.	1928-1953	1988
Hoer, Cletus A.	1956-1989	2001
Hoffman, James I.	1918-1962	1988
Hoffman, John D.	1954-1982	1988
Hord, Jesse L.	1961-1992	2003
Horlick, Jeffrey	1967-2006	2014
Horowitz, Emanuel	1951-1980	1988
Hougen, Jon T.	1967-2002	2003
Hudson, Ralph P.	1951-1980	1988
Huntoon, Robert D.	1941-1968	1988
Ingberg, Simon H.	1914-1947	1988
Isbell, Horace S.	1927-1968	1988
Itano, Wayne M.	1979-2009	2024
Jackson, Richard H. F.	1971-2000	2025
Jacox, Marilyn E.	1962-1995	2000
Jennings, Donald A.	1961-1991	2001
Jin, Deborah S.	1997-2016	2017
Johnson, Donald R.	1967-1993	2008
Johnson, Victor J.	1950-1972	1995
Jones, Sarah A.	1920-1966	1988
Judd, Deane B.	1927-1970	1988
Judson, Lewis V.	1917-1962	N/A
Julienne, Paul S.	1969-1973 & 1974-2013	2014
Kamper, Robert A.	1963-1994	1999
Kashiwagi, Takashi	1971-2001	2005
Katzke, Stuart	1975-1999 & 2001-2008	2013
Kautz, Richard	1976-1997	1999
Kayser, Jr., Richard F.	1976-2018	2019
Kelly, George E.	1970-2007	2016
Kerns, David M.	1946-1980	2001
Kessler, Karl G.	1948-1990	1999
Kim, Yong-Ki	1983-2006	2008
Kirby, Richard C.	1948-1950 & 1951-1965	2003
Kirsch, Russell A.	1951-1985	2006
Klebanoff, Philip S.	1941-1985	1995
Kline, Gordon M.	1929-1963	1988

## Name, Tenure, Year Inducted into Gallery

Kline, Margaret C.	1985-2020	2021
Koch, H. William	1949-1966	1988
Kostkowski, Henry J.	1954-1981	2001
Kramer, Samuel	1970-1997	1999
Krauss, Morris	1955-2004	2004
Kruger, Jerome	1955-1984	1998
Ku, Hsien (Harry)	1959-1985	2002
Kurylo, Michael J.	1969-2003	2015
Kushner, Lawrence	1946-1973	1988
Kusuda, Tamami	1962-1986	1998
Kuyatt, Chris E.	1960-1998	1999
Lafferty, Walter J.	1961-1995	2014
Lanczos, Cornelius	1943-1944 & 1949-1952	2010
Landon, Harry H.	1958-1972	2003
Lange, Oscar G.	1902-1937	2017
Lawn, Brian	1982-2009	2012
Leiss, James E.	1954-1986	2007
Levelt Sengers, Johanna M. H.	1963-1995	2000
Lew, Hai S.	1968-2020	2022
Lias, Sharon G.	1956-2001	2005
Lide, Bettijoyce Breen	1969-2013	2018
Lide, David R.	1954-1988	1999
Lindstrom, Richard M.	1972-2007	2012
Lippiatt, Barbara C.	1977-2013	2015
Little, C. Gordon	1958-1965	2003
Lloyd, Frances L.	1977-1989	2009
Locascio, Laurie E.	1986-2017	2018
Long, Gabrielle G.	1965-1967 & 1980-2003	2014
Lovas, Francis J.	1970-2000	2015
Lowell, Percival D.	1913-1924 & 1941-1962	1988
Lozier, Daniel W.	1969-2019	2020
Lykke, Keith R.	1997-2016	2020
Lyons, Harold	1941-1955	1988
MacCrehan, William A.	1977-2022	2023
Madden, Robert	1961-1998	2000
Madey, Theodore E.	1963-1988	2003
Mandel, John	1947-2000	2002
Mann, Wilfred B.	1951-1980	1995
Marshall, Richard D.	1968-1996	2001

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## Name, Tenure, Year Inducted into Gallery

Martin, Michael L.	1995-2018	2023
Martin, William C.	1957-1998	2002
Martinis, John M.	1987-2004	2008
Marton, Ladislaus L.	1946-1970	1998
May, Willie E.	1971-2017	2017
McFadden, Geoffrey B.	1982-2021	2022
McLaughlin, William L.	1951-1996	2000
McMurdie, Howard F.	1928-1966	1998
McNish, Alvin G.	1920-1925 & 1946-1970	1988
McPherson, Archibald T.	1923-1965	1988
Meggers, William F.	1914-1958	1988
Meinke, W. Wayne	1963-1973	1988
Menzer, James P.	1954-1976	1999
Meyerson, Melvin R.	1946-1978	2001
Miller, Janet B.	1969-1981 & 1988-2007	2017
Milligan, Dolphus E.	1963-1973	1988
Mohler, Fred L.	1917-1960	1988
Moldover, Michael R.	1972-2019	2020
Moore, Robert F.	1973-2007	2008
Morrison, Graham	1979-1993	2016
Mountain, Raymond D.	1963-2008	2018
Muehlhause, Carl O.	1958-1982	2003
Murphy, Thomas J.	1946-1986	2003
Natrella, Mary G.	1950-1987	1998
Nelson, Harold E.	1975-1992	2001
Nigro, James P.	1947-1974	1999
Nyssonen, Diana	1969-1985	2008
O'Brian, Thomas R.	1991-2019	2022
Odishaw, Hugh G.	1946-1953	1988
Ohlemiller, Thomas J.	1979-2008	2011
Olien, Neil	1961-1991	2007
Olsen, Paul Thomas	1963-1994	2012
Olver, Frank W. J.	1961-1986	2011
Ott, William R.	1968-2011	2019
Paffenbarger, George C.	1929-1941 & 1946-1984	1988
Page, Chester H.	1941-1974	1988
Parr, Albert C.	1980-2007	2011
Parsons, Douglas E.	1923-1963	1988
Passaglia, Elio	1961-1987	1988

## Name, Tenure, Year Inducted into Gallery

Peiser, H. Steffen	1957-1989	2009
Persily, Andrew K.	1982-2024	2024
Petersons, Oskars	1968-1994	2000
Pfrang, Edward O.	1966-1983	1995
Pierce, Daniel T.	1975-2007	2008
Plyler, Earle K.	1945-1963	1998
Polk, W. Timothy	1982-2018	2021
Porter, Gail J.	1978-1981 & 1991-2020	2022
Powell, Cedric	1962-2006	2010
Prather, Denise D.	1970-2021	2022
Priest, Irwin G.	1907-1932	N/A
Rabinow, Jacob	1934-1953 & 1972-1989	1988
Raby, Tawfik M.	1968-2009	2009
Radebaugh, Ray	1966-2009	2010
Reader, Joseph	1963-2014	2016
Reed, Richard P.	1956-1990	1995
Reimann, Curt	1962-1995	1999
Rice, Kirk D.	1998-2019	2023
Roberts, James R.	1964-1999	2003
Robertson, Alexander F.	1950-1981	1999
Rochford, Kent B.	1992-2000 & 2002-2012 & 2014-2018	2024
Romanoff, Melvin	1937-1970	1995
Rosa, Edward B.	1901-1921	1988
Rosasco, Gregory J.	1969-2000 & 2002-2006	2025
Rosenberg, Samuel J.	1920-1964	1998
Rosenblatt, Joan	1955-1995	2000
Rosenstock, Henry	1960-1982	N/A
Rossini, Frederick D.	1928-1950	1988
Roth, Robert S.	1951-1991	2000
Rowe, J. Michael	1973-2004	2006
Rubin, Michael Rogers	1988-2009	2011
Ruegg, Rosalie T.	1970-2000	2005
Rumble, John R.	1980-2004	2017
Rush, John J.	1962-2004	2006
Saunders, Mary H.	1993-2008 & 2011-2017	2020
Saylor, Charles P.	1931-1968	1988
Schaffer, Robert	1950-1988	2001
Schiller, Susannah B.	1987-2020	2025

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Name, Tenure, Year Inducted into Gallery

Schooley, James	1960-1990	2010
Schoonover, Irl C.	1928-1930 & 1935-1969	1988
Schubauer, Galen B.	1929-1968	1995
Schwartz, Lyle	1984-1997	2010
Scott, Russell B.	1928-1965	1988
Scribner, Bourdon F.	1927-1973	2018
Seltzer, Stephen	1962-2010	2012
Semerjian, Hratch G.	1977-2007	2008
Shaffer, Sharon A.	1971-2006	2019
Shull, Robert D.	1979-2018	2021
Silsbee, Francis B.	1911-1959	1988
Simiu, Emil	1971-2022	2024
Simpson, John A.	1948-1993	1999
Sitterly, Charlotte E. Moore	1945-1968	1988
Skillington, Jr., James	1960-1977	1999
Smid, Miles E.	1978-1999	2005
Smith, Annie J.	1989-2018	2025
Smith, Ernest K.	1951-1965	2003
Snell, Jack E.	1971-2003	2005
Sniegowski, Lorna T.	1954-1965 & 1974-2004	2023
Snyder, Wilbert F.	1927-1969	1995
Sorrows, Howard E.	1941-1952 & 1956-1987	1988
Souder, Wilmer	1910-1913 & 1917-1954	1988
Stegun, Irene A.	1943-1983	1995
Stephenson, John C.	1971-2005	2009
Stiehler, Robert D.	1946-1981	2002
Stimson, Harold F.	1916-1960	1988
Stranick, Stephan J.	1996-2024	2025
Sugar, Jack	1960-1995	2017
Sullivan, Donald B.	1967-2003	2004
Sullivan, Francis E.	1982-1993	2017
Talbott, Terri	1972-2011	2012
Taussky-Todd, Olga	1947-1957	2002
Taylor, Barry N.	1970-2001	2003
Taylor, John K.	1929-1986	1988
Taylor, Lauriston S.	1927-1964	1988
Teague, E. Clayton	1972-2011	2015
Teal, Gordon K.	1965-1967	N/A
Thomas, James L.	1927-1962	2003

Name, Tenure, Year Inducted into Gallery

Thomas, Richard N.	1957-1973	2011
Thomson, Robb	1971-1995	2000
Tilford, Charles R.	1970-2000	2014
Tilley, W. Reeves	1946-1980	1995
Todd, John	1947-1957	2002
Tsang, Wing	1962-2013	2019
Tuckerman, Louis B.	1919-1949	1988
Twilley, William H.	1978-2004	2025
Unguris, John	1980-2018	2022
Uriano, George A.	1961-1995	1999
Van Brunt, Richard J.	1978-1996	2003
Vinal, George W.	1904-1950	1988
Voorhees, Ellen M.	1996-2023	2024
Vorburger, Theodore V.	1972-2009	2025
Wachtman, Jr., John. B.	1951-1983	1988
Waidner, Charles W.	1901-1922	N/A
Wait, James R.	1955-1980	1995
Walleigh, Robert. S.	1943-1953 & 1957-1978	1988
Washburn, Edward W.	1926-1934	1988
Watters, Jr., Robert L.	1976-2016	2019
Wegstein, Joseph H.	1951-1984	1995
West, E. Dale	1948-1974	2002
Wichers, Edward	1917-1963	1988
Wiederhorn, Sheldon	1963-2008	2011
Wiese, Wolfgang L.	1960-2004	2005
Wildhack, William A.	1935-1969	1988
Willenbrock, F. Karl	1970-1976	N/A
Williams, Edwin Ross	1971-2008	2011
Wilson, Charles L.	1979-2006	2019
Wineland, David J.	1975-2017	2019
Wolff, Frank A.	1901-1941	1988
Wright, James R.	1960-1985	1999
Wright, Richard N.	1971-1999	2002
Wu, Wen-li	1979-2013	2013
Yates, Jr., John T.	1963-1982	2003
Youden, William J.	1948-1965	1988
Young, Russell D.	1961-1981	1988
Zeisler, Rolf L.	1978-1991 & 1996-2009	2018
Zimmerman, James E.	1970-1985	2001

N/A = not available





Portrait Gallery Hallway

