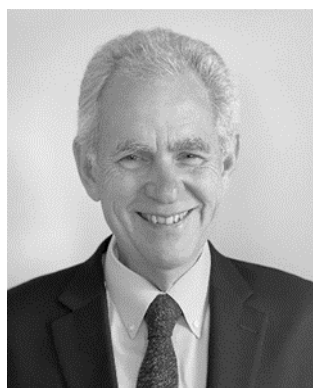


NIST Gallery of Distinguished Scientists, Engineers, and Administrators



Celebrating Our 2021 Honorees

October 22, 2021



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 Scientists, Engineers, and Administrators

Adding Nine Honorees to the Gallery

**Friday, October 22, 2021
Virtual Ceremony**

10:30 am – Noon

Arranged by
STANDARDS ALUMNI ASSOCIATION



**Harry Hertz, President
Bettijoyce Lide, Chair, 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 NIST Gallery of Distinguished Scientists, Engineers, and Administrators 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 360 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 2021

Committee Chair Bettijoyce Lide
Committee Vice Chair Harry Hertz
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, Norman Belecki, and Richard Lindstrom

2021 Jury

Jacqueline Calhoun

Cita Furlani

Howard Harary

Harry Hertz (non-voting)

Bettijoyce Lide (non-voting)

John Lowe

Roger Martin

Willie May

Cedric Powell

David Seiler

David Simons

Robert Watters

Barbara Uglik (non-voting)

PROGRAM

Opening Comments Harry Hertz, President, SAA

Welcoming Remarks The Director, NIST

Presentations Bettijoyce Lide, Chair, Portrait Gallery Committee

Bennett, Herbert S. PML Years at NBS/NIST: 1966-2015
For pioneering solid-state theoretical models to predict nanoelectronic device behavior and for exceptional support of the semiconductor industry through both seminal research and leadership in international standards and technology roadmaps

Cavanagh, Richard R. OD Years at NBS/NIST: 1979-2019
For outstanding scientific contributions to time-resolved studies of molecular dynamics on surfaces and leadership of a broad range of NIST technical programs

Collins, Belinda L. ITL Years at NBS/NIST: 1974-2012
For highly impactful contributions to human factors and engineering research in building technology and exceptional leadership nationally and internationally in voluntary consensus standardization and conformity assessment

Dodson, Donna F. ITL Years at NBS/NIST: 1987-1999; 2003-2020
For exceptional technical acumen, extraordinary leadership, and worldwide impact while strengthening the nation's cybersecurity posture

Garner, Ernest L. MML Years at NBS/NIST: 1958-2000
For leadership in isotope ratio measurements of reference materials critical to the international nuclear safeguards effort and for contributions to the establishment of international quality standards for calibration and measurement laboratories

Glenn, K. Robert OISM Years at NBS/NIST: 1987-2020
For establishing and managing the highly successful NIST-wide operational cybersecurity program, balancing risk and mission, enabling broad use of information technology, and protecting NIST computers, networks, data, and reputation against cybersecurity threats

Kline, Margaret C. MML Years at NBS/NIST: 1985-2020
For outstanding contributions through the development of the NIST forensic DNA measurement and documentary standards program that has underpinned the U.S. DNA database used in more than half a million criminal investigations over the past two decades

Polk, W. Timothy ITL Years at NBS/NIST: 1982-2018
For technical contributions and standards leadership to give the Internet much-needed security

Shull, Robert D. MML Years at NBS/NIST: 1979-2018
For extraordinary creativity and innovation in fundamental research on magnetic materials and their industrial impacts, and his passion for service resulting in literally thousands of better educated STEM students

Closing Remarks and Acknowledgments Bettijoyce Lide



HERBERT S. BENNETT

NBS/NIST: 1966–2015

INDUCTED: 2021

B: Quincy, Massachusetts

EDUCATION:

Harvard College, BA (Physics), 1958
University of Maryland, MS (Physics and Mathematics), 1960
Harvard University, PhD (Physics), 1964

CITATION: For pioneering solid-state theoretical models to predict nanoelectronic device behavior and for exceptional support of the semiconductor industry through both seminal research and leadership in international standards and technology roadmaps

POSITIONS HELD AT NBS/NIST:

Physicist, Inorganic Materials Division, Institute for Materials Research, 1966-1972
Commerce Science and Technology Fellow, Office of the Assistant Secretary for S&T, 1971-1972
Chief, Solid State Materials Section, Inorganic Materials Division, Institute for Materials Research, 1972-1978
Director, Division of Materials Research, NSF (detail from NBS), 1978-1980
Group Leader, Device Modeling/Technology, Semiconductor Electronics Division, Center for Electronics and Electrical Engineering (CEEE), National Engineering Laboratory, 1980-1990
Senior Scientist, Semiconductor Electronics Division, CEEE/ Electronics and Electrical Engineering Laboratory (EEEL), 1988-1998
NIST Fellow, Semiconductor Electronics Division, EEEL/Physical Measurement Laboratory (PML), 1998-2015
Guest Researcher, PML 2015-

HONORS:

Maryland Outstanding Young Scientist Award, Maryland Academy of Sciences (1970)
Chair, ATP Technical Review Panel (1994)
Fellow, Institute of Electrical and Electronics Engineers (IEEE) (1997)
IEEE Distinguished Lecturer (2002-2015)
Fellow, American Physical Society (2004)
NIST Bronze Medal (2007)
Fellow, Materials Research Society (2012)
IEEE-SA Emerging Technology Award (2014)
Albert Nelson Marquis Lifetime Achievement Award (2019)

MEMBERSHIPS:

Institute of Electrical and Electronics Engineers (IEEE)
American Physical Society
Materials Research Society

PUBLICATIONS:

More than 240 publications including:
Bennett, H.S., "Hole and Electron Mobilities in Heavily Doped Silicon: Comparison of Theory and Experiment", *Solid-State Electronics* 26, 1157 (1983)
Bennett, H.S., "Absorbing Centers in Laser Materials", *J. Appl. Phys.* 42, 619 (1971) - Republished in *SPIE Milestone Review of Selected Papers on Laser Damage in Optical Materials* (1990)
Bennett, H.S., Lowney, J.R., Tomizawa, M., and Ishibashi, T., "Experimentally Verified Majority and Minority Mobilities in Heavily Doped GaAs for Device Simulations", *IEICE Trans. Electron.* E75-C, 161 (1992)
Bennett, H.S., Pellegrino, J., and Andres, H., "A Method for Assigning Priorities to United States Measurement System (USMS) Needs: Nano-Electrotechnologies", *J. of Res. of NIST* 114, 4 (2009)
Ochoa, M.A., Maslar, J.E., and Bennett, H.S., "Extracting Electron Densities in n-type GaAs from Raman Spectra: Comparisons with Hall Measurements", *J. of Appl. Physics* 128, 075703 (2020)



RICHARD R. CAVANAGH

NBS/NIST: 1979–2019

INDUCTED: 2021

B: 1950, Detroit, Michigan

EDUCATION:

Wayne State University, BA (Chemistry), 1972

Harvard University, MS (Chemistry), 1974

Harvard University, PhD (Physical Chemistry), 1978

CITATION: For outstanding scientific contributions to time-resolved studies of molecular dynamics on surfaces and leadership of a broad range of NIST technical programs

POSITIONS HELD AT NBS/NIST:

NAS/NRC Postdoctoral Research Associate, Surface Science Division, National Measurement Laboratory (NML), 1979-1980

Research Chemist, Surface Science Division, NML, 1980-1988

Group Leader, Surface Dynamical Processes Group, Surface Science Division, NML, and then Surface and Microanalysis Science Division, Chemical Science and Technology Laboratory (CSTL), 1988-1998

Chief, Surface and Microanalysis Science Division, CSTL, 1999-2008

Deputy Director, CSTL and then Materials Measurement Laboratory (MML), 2008-2012

Chair, NIST Institutional Review Board, 2009-2014

Acting Director, MML, 2011-2012

Director, Special Programs Office, 2012-2019

Acting Associate Director for Laboratory Programs, 2014-2016

HONORS:

U.S. Department of Commerce Silver Medal (1984)

U.S. Department of Commerce Gold Medal (1990)

Samuel Wesley Stratton Award (1992)

Fellow, American Vacuum Society (2003)

Fellow, American Physical Society (2004)

Presidential Rank Award (2017)

MEMBERSHIPS:

American Vacuum Society

American Physical Society

PUBLICATIONS:

More than 100 publications including:

Cavanagh, R.R. and Yates, Jr., J.T., "Site Distribution Studies of Rh Supported on Al₂O₃: An Infrared Study of Chemisorbed CO", *J. Chem. Phys.*, 74, 4150-4155 (1981)

Rush, J.J., Cavanagh, R.R., Kelley, R.D., and Rowe, J.M., "Interaction of Vibrating H Atoms on the Surface of Platinum Particles by Isotope Dilution Neutron Spectroscopy". *J. Chem. Phys.*, 83, 5339-5341 (1985)

Cavanagh, R.R., Beckerle, J.D., Casassa, M.P., Heilweil, E.J. and Stephenson, J.C., "Subpicosecond Probing of Vibrational Energy Transfer at Surfaces", *Surface Science*, 269/270, 113-119 (1992)

Cavanagh, R.R., King, D.S., Stephenson, J.C., and Heinz T.F., "Dynamics of Nonthermal Reactions: Femtosecond Surface Chemistry", *J. Phys. Chem.*, 97, 786-798 (1993)

Cavanagh, R.R., Heilweil, E.J., and Stephenson, J.C., "Time-Resolved Measurements of Energy Transfer at Surfaces", *Surface Science*, 299/300, 643-655 (1994)



BELINDA L. COLLINS

NBS/NIST: 1974–2012
INDUCTED: 2021

B: 1946, Washington, District of Columbia

EDUCATION:

University of Mary Washington, BA (Psychology), 1968
University of Virginia, MA/PhD (Experimental Psychology),
1971/1973

CITATION: For highly impactful contributions to human factors and engineering research in building technology and exceptional leadership nationally and internationally in voluntary consensus standardization and conformity assessment

POSITIONS HELD AT NBS/NIST:

Researcher, Building Environment Division, Center for Building Technology (CBT), Institute for Applied Technology/National Engineering Laboratory, 1974-1984
Leader, Lighting Group, Building Environment Division, CBT/Building and Fire Research Laboratory, 1984-1993
Program Analyst, Program Office, Office of the NIST Director, 1993-1994
Director, Office of Standards Services, Technology Services (TS), 1994-2001
Deputy Director, TS, 2001-2006; Director, TS, 2006-2010
Senior Advisor for Voting Standards, Information Technology Laboratory, 2010-2012

HONORS:

NBS Bronze Medal (1984)
Fellow, Illuminating Engineering Society of North America (1994)
ANSI Meritorious Service Award (1997)
National Cooperation for Laboratory Accreditation Lifetime Achievement Award (1997)
American Council of Independent Laboratories Public Service Award (1997)
NIST Edward Bennett Rosa Award (2000)
U.S. Department of Commerce Silver Medals (2001 and 2005)
ASTM International Margaret Dana Award (2004)
Fellow, Standards Engineering Society (2007)
ANSI Howard Coonley Medal (2008)
Federal Laboratory Consortium Laboratory Director of the Year (2009)

MEMBERSHIPS:

ANSI
Illuminating Engineering Society of North America
American Association for the Advancement of Science
Women in Technology

PUBLICATIONS:

More than 90 publications including:
Collins, B.L., *Windows and People: A Literature Survey of the Psychological Reaction to Environments With and Without Windows*, NBS Building Science Series 70, (1975)
Collins, B.L., *The Development and Evaluation of Effective Symbol Signs*, NBS Building Science Series 141, (1982)
Collins, B.L., Dahir, M.S., and Madrzykowski, D., “Visibility of Exit Signs in Clear and Smokey Conditions”, *Journal of the Illuminating Engineering Society* 21(1), 69-84 (1992)
Collins, B.L. and Worthey, J.A., “Lighting for Meat and Poultry Inspection”, *Journal of the Illuminating Engineering Society* 15(1), 21-28 (1985)



DONNA F. DODSON

NBS/NIST: 1987–1999; 2003–2020
INDUCTED: 2021

B: 1962, Washington, District of Columbia

EDUCATION:

Virginia Polytechnic Institute and State University, BS
(Computer Science), 1984
Hood College, MS (Computer Science), 1990

CITATION:

For exceptional technical acumen, extraordinary leadership,
and worldwide impact while strengthening the nation's
cybersecurity posture

POSITIONS HELD AT NBS/NIST:

Computer Scientist, Computer Security Division (CSD), Computer Systems Laboratory (CSL), 1987-1994
Supervisory Computer Scientist, CSD, CSL, 1994-1995
Computer Scientist, then Group Leader, Security Technology Group, CSD, CSL/Information Technology Laboratory
(ITL), 1995-1999
IT Specialist, CSD, ITL, 2003-2007
Deputy Division Chief/Division Chief, CSD, ITL, 2008-2014
Inaugural Director, NIST National Cybersecurity Center of Excellence, 2012-2019
Senior Research Scientist, NIST, 2014-2017
NIST Chief Cybersecurity Advisor, 2012-2020
NIST Fellow, 2017-2020

HONORS:

NIST Bronze Medals (1992 and 1997)
U.S. Department of Commerce Gold Medals (2007 and 2014)
International Trade Administration Bronze Medal (2009)
Federal 100 Awards (2011 and 2018)
Top 10 Most Influential People in Government Information Security (2012)
D.C.'s Top 50 Women in Technology, *FedScoop* (2012 and 2014-2016)
CyberScoop's Top Women in Cybersecurity (2016 and 2017)
Presidential Rank Award (2019)
Samuel J. Heyman Service to America Medal (2020)

MEMBERSHIPS:

Forum on Cyber Resilience, National Academies of Science, Engineering, and Medicine
University of Maryland Baltimore Campus Department of Computer Science and Electrical Engineering External
Advisory Board
University of Maryland Baltimore Campus Center for Women in Technology, Advisor
American University Kogod School of Business Cybersecurity Governance Center
University of Maryland Advisory Board in Computing

PUBLICATIONS:

More than 50 publications including:
Burr, W., Dodson, D., and Polk, W., *Electronic Authentication Guideline*, NIST SP 800-63 (2004)
Dodson, D. et al, *Personal Identity Verification (PIV) of Federal Employees and Contractors*, Federal Information
Processing Standards Publication 201 (2005)
Polk, W.T., Dodson, D.F., Burr W.E., Ferraiolo, H., and Cooper, D., *Cryptographic Algorithms and Key Sizes for
Personal Identity Verification*, NIST SP 800-78-4 (2015)
Dodson, D., Souppaya, M., and Scarfone, K., *Mitigating the Risk of Software Vulnerabilities by Adopting a Secure
Software Development Framework (SSDF)*, NIST Cybersecurity White Paper (2020)



ERNEST L. GARNER

NBS/NIST: 1958–2000

INDUCTED: 2021

B: 1934, Garysburg, North Carolina

EDUCATION:

Virginia State University, BS (Physics), 1956

U.S. Army Ordnance Corps Officer, 1956-1958

CITATION:

For leadership in isotope ratio measurements of reference materials critical to the international nuclear safeguards effort and for contributions to the establishment of international quality standards for calibration and measurement laboratories

POSITIONS HELD AT NBS/NIST:

Physicist, Analytical Mass Spectrometry Section, Analytical Chemistry Division, Institute for Materials Research, 1958-1974

Staff, Nuclear Safeguards Measurements Program, Institute for Basic Standards, 1975-1977

Chief, Inorganic Analytical Research Division, Center for Analytical Chemistry, National Measurement Laboratory (NML), 1978-1984

Chief, Office of Physical Measurement Services, NML, 1985-1987

Department of Commerce Science Fellow, Office of the Under Secretary for Defense, Research and Development, 1988-1989

Deputy Chief, Calibration Program, Technology Services, 1989-2000

HONORS:

U.S. Department of Commerce Silver Medal (1971)

National Conference of Standards Laboratories International, William Wildhack Award (2000)

Government-Industry Data Exchange Program, Metrology Appreciation Award (2000)

MEMBERSHIPS:

American Society for Mass Spectrometry

American Association for the Advancement of Science

National Conference of Standards Laboratories International

PUBLICATIONS:

More than 40 publications including:

Rosholt, J.N., Shields, W.R., and Garner, E.L., "Isotopic Fractionation of Uranium in Sandstone", *Science*, 139 (355), 224-226 (1963)

Catanzaro, E.J., Murphy, T.J., Shields, W.R., and Garner, E.L., "Absolute Isotopic Abundance Ratios of Common Equal-Atom and Radiogenic Lead Isotopic Standards", *J. of Res. of NBS Section A-Physics and Chemistry*, A72 (3), 261-267 (1968)

Catanzaro, E.J., Champion, C.E., Garner, E.L., Marinenko, G., Sappenfield, K.M., and Shields, W.R., *Standard Reference Materials: Boric Acid; Isotopic and Assay, Standard Reference Materials*, NIST SP 260-17 (1970)

Garner, E.L., Machlan, L.A., and Shields, W.R., *Standard Reference Materials: Uranium Isotopic Standard Reference Materials Certification of Uranium Isotopic Standard Reference Materials*, NIST SP 260-27 (1971)

Garner, E.L., Machlan, L.A., and Barnes, I.L., "The Isotopic Composition of Lithium, Potassium, and Rubidium in Some Apollo 11, 12, 14, 15, and 16 Samples", *Proc. Lunar Sci. Conf. 6th*, 1845-1855 (1975)

Velapoldi, R.A., Paule, R.C., Schaffer, R., Mandel, J., Machlan, L.A., Garner, E.L., and Rains, T.C., *Standard Reference Materials: A Reference Method for the Determination of Lithium in Serum*, NIST SP 260-69 (1980)



K. ROBERT GLENN

NBS/NIST: 1987–2020
INDUCTED: 2021

B: 1964, Brookville, Pennsylvania

EDUCATION:

Clarion University, BS (Computer Science), 1987
Johns Hopkins University, MS (Computer Science), 1993

CITATION:

For establishing and managing the highly successful NIST-wide operational cybersecurity program, balancing risk and mission, enabling broad use of information technology, and protecting NIST computers, networks, data, and reputation against cybersecurity threats

POSITIONS HELD AT NBS/NIST:

Computer Scientist, Advanced Network Technologies Division, Information Technology Laboratory (ITL), 1987-2000

Network and System Administrator, Advanced Network Technologies Division, ITL, 1987-2000

Information Technology Security Officer, Office of the Chief Information Officer/Office of Information Systems Management (OISM), Management Resources (MR), 2000-2020

Chief, Information Technology Security and Networking Division, OISM, MR, 2003-2020

SIGNIFICANCE OF WORK:

Mr. Glenn leveraged his early network and network security standards and system administrator experience to develop and manage a robust operational cybersecurity and network operations program, balancing risk and mission needs, supporting over 25,000 NIST computers, campus networks in Maryland and Colorado, NIST administrative and research data, the financial services used by NIST and several Department of Commerce (DOC) Bureaus, the secure configuration of all DOC computers, and the development of new DOC directives. The program also protected NIST's technical reputation through the implementation of the federal cybersecurity standards developed and promulgated by NIST, ensuring the security of NIST data and critical systems. Working closely with the Information Technology Laboratory, the program benefited from access to a broad group of cybersecurity expertise and leading-edge research and supported the NIST federal cybersecurity standards mission providing operational feedback on new standards.

HONORS:

NIST Bronze Medals (1998 and 2001)

DOC Chief Information Officer Award (2014)

DOC Certificate of Appreciation (2015)

MEMBERSHIPS:

ISACA Certified in Risk and Information Systems Control (professional certification)

PUBLICATIONS:

More than 7 publications including:

Madson, C. and Glenn, K.R., "The Use of HMAC-SHA-1-96 within ESP and AH", RFC 2404, *IETF Network Working Group* (1998)

Glenn, K.R. and Kent, S., "The NULL Encryption Algorithm and Its Use with IPsec", RFC 2410, *IETF Network Working Group* (1998)

Frankel, S., Glenn, K.R., and Kelly, S., "The AES-CBC Cipher Algorithm and Its Use with IPsec", RFC 3602, *IETF Network Working Group* (2003)



MARGARET C. KLINE

NBS/NIST: 1985–2020

INDUCTED: 2021

B: 1954, Hagerstown, Maryland

EDUCATION:

University of Maryland, BS (Animal Science/Veterinary Science), 1976

University of Maryland, MS (Animal/Dairy/Veterinary Science/Food Science), 1979

CITATION:

For outstanding contributions through the development of the NIST forensic DNA measurement and documentary standards program that has underpinned the U.S. DNA database used in more than half a million criminal investigations over the past two decades

POSITIONS HELD AT NBS/NIST:

Research Biologist, Organic Analytical Research Division, Center for Analytical Chemistry, National Measurement Laboratory, 1985-1988

Research Biologist, DNA Technologies Group, Biotechnology Division, Chemical Science and Technology Laboratory, 1988-2003

Research Biologist, Applied Genetics Group, Biomolecular Measurement Division, Material Measurement Laboratory, 2003-2020

HONORS:

Standard Reference Materials Program Measurement Services Award (1991 and 1995)

NIST Bronze Medal (1995)

W.J. Youden Award in Interlaboratory Testing, American Statistical Association (2000)

U.S. Department of Commerce Gold Medal (2008)

Judson C. French Award (2014)

MEMBERSHIPS:

American Chemical Society

NIST/ National Institute of Justice Technical Working Group on Biological Evidence Preservation

American Type Culture Collection, Standards Development Organization

Association for Molecular Pathology

PUBLICATIONS:

More than 60 publications including:

Kline, M.C., Duewer, D.L., Newall, P., Redman, J.W., Reeder, D.J., and Richard, M., "Interlaboratory Evaluation of Short Tandem Repeat Triplex CTT", *J. Forensic Sci.* 42(5):897-906 (1997)

Kline, M.C., Duewer, D.L., Redman, J.W., Butler, J.M., and Boyer, D.A., "Polymerase Chain Reaction Amplification of DNA from Aged Blood Stains: Quantitative Evaluation of the 'Suitability for Purpose' of Four Filter Papers as Archival Media", *Anal. Chem.* 74:1863-1869 (2002)

Butler, J.M., Schoske, R., Vallone, P.M., Redman, J.W., and Kline, M.C., "Allele Frequencies for 15 Autosomal STR Loci on U.S. Caucasian, African American and Hispanic Populations", *J. Forensic Sci.* 48:908-911 (2003)

Hill, C.R., Kline, M.C., Coble, M.D., and Butler, J.M., "Characterization of 26 MiniSTR Loci for Improved Analysis of Degraded DNA Samples", *J. Forensic Sci.* 53:73-80 (2008)

Kline, M.C., Hill, C.R., Decker, A.E., and Butler J.M. "STR Sequence Analysis for Characterizing Normal, Variant, and Null Alleles", *FSI Genetics* 5(4):329-332 (2011)



W. TIMOTHY POLK

NBS/NIST: 1982–2018

INDUCTED: 2021

B: 1962, Valley Forge, Pennsylvania

EDUCATION:

University of Maryland, BS (Computer Science), 1985

University of Maryland, BS (Electrical Engineering), 1986

CITATION: For technical contributions and standards leadership to give the Internet much-needed security

POSITIONS HELD AT NBS/NIST:

Computer Scientist Trainee, Institute for Computer Sciences and Technology (ICST), 1982-1986

Computer Scientist, Systems and Software Technology Division, ICST, 1986-1988

Computer Scientist, Computer Security Division (CSD), Computer Systems Laboratory/Information Technology Laboratory (ITL), 1988-2005

Supervisor, Cryptographic Technology Group, CSD, ITL, 2005-2011

Group Leader, Cryptographic Technology Group, CSD, ITL, 2011-2012

Detail to the Office of Science and Technology Policy, 2012-2017

Internet Standards Liaison, National Cybersecurity Center of Excellence, 2017-2018

HONORS:

NIST Bronze Medal (1997)

U.S. Department of Commerce Gold Medals (2007 and 2011)

MEMBERSHIPS:

Internet Engineering Task Force (IETF)

IETF Public Key Infrastructure using X.509 (PKIX) Working Group co-chair

IETF Security Area Director

PUBLICATIONS:

More than 50 publications including:

Housley, R., Ford, W., Polk, W., and Solo, D., "Internet X.509 Public Key Infrastructure Certificate and CRL Profile", RFC 2459, *IETF Network Working Group* (1999)

Housley, R. and Polk, T., *Planning for PKI: Best Practices Guide for Deploying Public Key Infrastructure*, Wiley & Sons (2001)

Barker, E., Barker, W., Burr, W., Polk, W., and Smid, M., *Recommendation for Key Management, Part 1: General*, NIST SP 800-57 Pt 1 (2005)

Burr, W., Dodson, D., and Polk, W., *Electronic Authentication Guideline*, NIST SP 800-63 (2004)

Polk, W., Dodson, D., and Burr, W., *Cryptographic Algorithms and Key Sizes for Personal Identity Verification*, NIST SP 800-78 (2005)

Cooper, D., Santesson, S., Farrell, S., Boeyen, S., Housley, R., and Polk, W., "Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List Profile", RFC 5280, *IETF Network Working Group* (2008)



ROBERT D. SHULL

NBS/NIST: 1979–2018
INDUCTED: 2021

B: 1946, Knoxville, Tennessee

EDUCATION:

Massachusetts Institute of Technology, SB (Materials Science), 1968
University of Illinois at Urbana-Champaign, MS (Metallurgical and Mining Engineering), 1973
University of Illinois at Urbana-Champaign, PhD (Metallurgical and Mining Engineering), 1976

CITATION: For extraordinary creativity and innovation in fundamental research on magnetic materials and their industrial impacts, and his passion for service resulting in literally thousands of better educated STEM students

POSITIONS HELD AT NBS/NIST:

Metallurgist, Metallurgy Division, Center for Materials Science, National Measurement Laboratory/Materials Science and Engineering Laboratory (MSEL), 1979-1994
Group Leader, Magnetic Materials Group, Metallurgy Division, MSEL/Material Measurement Laboratory (MML), 1995-2014
Metallurgist, Materials Science and Engineering Division, MML, 2014-2018
NIST Fellow, 2010-2018
Scientist Emeritus, 2018-

HONORS:

NIST Chapter of Sigma Xi, Outstanding Service Award (2003)
Montgomery County Cooperative Extension Honor Roll (2003)
NIST EEO/Diversity Awards (2003 and 2006)
Fellow, Institute of Electrical and Electronics Engineers (IEEE) (2007)
President, The Minerals, Metals, & Materials Society (TMS) (2007)
Honorary Member, Indian Institute of Metals (2009)
SPIE Nanoengineering Pioneer Award (2009)
Fellow, TMS (2012)

MEMBERSHIPS:

Institute of Electrical and Electronics Engineers (IEEE)
The Minerals, Metals, & Materials Society (TMS)

PUBLICATIONS:

More than 200 publications including:

K. Moorjani, J. Bohandy, F.J. Adrian, B.F. Kim, R.D. Shull, C.K. Chiang, L.J. Swartzendruber, and L.H. Bennett, "Superconductivity in Bulk and Thin Films of $\text{La}_{1.85}\text{Sr}_{0.15}\text{CuO}_{4-\delta}$ and $\text{Ba}_2\text{YCu}_3\text{O}_{7-\delta}$ ", *Physical Review B*, 36, 4036 (1987)
A.J. Melmed, R.D. Shull, C.K. Chiang, and H.A. Fowler, "Possible Evidence for Superconducting Layers in Single Crystal $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ by Field Ion Microscopy", *Science*, 239, 176-178 (1988)
R.D. McMichael, R.D. Shull, L.J. Swartzendruber, L.H. Bennett, and R.E. Watson, "Magnetocaloric Effect in Superparamagnets", *Journal of Magnetism and Magnetic Materials*, 111, 29 (1992)
V.I. Nikitenko, V.S. Gornakov, L.M. Dedukh, Yu.P. Kabanov, A.F. Khapikov, A.J. Shapiro, R.D. Shull, A. Chaiken, R.P. Michel, "Asymmetry of Domain Nucleation and Enhanced Coercivity in Exchange-biased Epitaxial NiO/NiFe Bilayers", *Physical Review B*, 57, R8111 (1998)
V. Provenzano, A.J. Shapiro, and R.D. Shull, "Reduction of Hysteresis Losses in the Magnetic Refrigerant $\text{Gd}_5\text{Ge}_2\text{Si}_2$ by the Addition of Iron", *Nature*, 429, 853 (2004)
Q. Ma, Y. Li, D.B. Gopman, Yu.P. Kabanov, R.D. Shull, and C.L. Chien, "Switching a Perpendicular Ferromagnetic Layer by Competing Spin Currents", *Physical Review Letters*, 120, 117703 (2018)

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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
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
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
Berquist, 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
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

Name, Tenure, Year Inducted into Gallery

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
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
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
Dorsey, N. Ernest	1903-1920 & 1928-1943	1988
Dowd, Ellen	1967-1973 & 1980-2006	2010
Driscoll, Raymond L.	1936-1971	2016
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

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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
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
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
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

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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
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
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

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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
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
Lias, Sharon G.	1956-2001	2005
Lide, Bettijoyce Breen	1969-2013	2018
Lide, David R.	1954-1988	1999
Lindstrom, Richard	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
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
Martin, William C.	1957-1998	2002
Martinis, John M.	1987-2004	2008
Marton, Ladislaus L.	1946-1970	1998
May, Willie E.	1971-2017	2017

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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
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
Peiser, H. Steffen	1957-1989	2009
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
Powell, Cedric	1962-2006	2010
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

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Reimann, Curt	1962-1995	1999
Roberts, James R.	1964-1999	2003
Robertson, Alexander F.	1950-1981	1999
Romanoff, Melvin	1937-1970	1995
Rosa, Edward B.	1901-1921	1988
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
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
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, Ernest K.	1951-1965	2003
Snell, Jack E.	1971-2003	2005
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
Sugar, Jack	1960-1995	2017
Sullivan, Donald B.	1967-2003	2004

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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
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
Uriano, George A.	1961-1995	1999
Van Brunt, Richard J.	1978-1996	2003
Vinal, George W.	1904-1950	1988
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



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