JHU Applied Physics Laboratory Colloquia
February 8, 2022

www.jhuapl.edu/colloquium/archive colloquium@jhuapl.edu

2021 – 2022

Lewis Dartnell (Univ. of Westminster) *The Knowledge: How to Rebuild Our World From Scratch.* February 4, 2022.

Alice Bowman (JHU/APL) *NASA's New Horizons Mission: Beyond Pluto.* January 28, 2022.

Melanie Mitchell (Santa Fe Institute) *Why AI Is Harder Than We Think.* January 21, 2022.

Charles Adler (St. Mary's College of Maryland) *Where Is the Science in All That Fiction?* January 14, 2022.

Ken Allen and Brendan Mulvaney (USAF China Aerospace Studies Inst.) *A Day in the Life of a PLA Air Force and Naval Aviation Unit.* January 11, 2022.

Mark Treanor (Author) *A Quiet Cadence, a Novel About Combat and Its Aftermath.* January 7, 2022.

Juan Maldacena (Institute for Advanced Study, School of Natural Sciences) *Black Holes and the Structure of Spacetime.* December 17, 2021.

Michael Krepon (The Stimson Center) *Winning and Losing the Nuclear Peace.* December 14, 2021.

Paul N. Stockton (JHU/APL Senior Fellow) *Defeating Coercive Information Operations in Future Crises.* December 10, 2021.

LT David West (U.S. Navy) *Terminal Effects of Hypersonic Weapon Impacts.* December 8, 2021.

Jennifer Wilcox (National Cryptologic Museum) *Talking in Code.* December 3, 2021.

Ken Falke (Founder/Chairman, Boulder Crest Foundation) *Struggle Well, Thriving in the Aftermath of Trauma.* November 19, 2021.

Skip Finley (Author) *Whaling Captains of Color: America's First Meritocracy.* November 5, 2021.

Michael Brenner (School of Engineering and Applied Science, Harvard Univ.) *Science and Cooking -- Teaching Physics to Undergraduates (And the World!) Through Cooking.* October 29, 2021.

Frank von Hippel (Univ. of Arizona) *The Chemical Age: Pesticides and Chemical Weapons From World War I to the Vietnam War.* October 22, 2021.

LT Elih M. Velazquez-Delgado (Armed Forces Radiobiology Research Institute) *America's Military – A Profession of Arms.* October 15, 2021.

Chris Fisher (Founder/Co-director of the Earth Archive and Professor, Colorado State Univ.) *The Case for an Earth Archive.* October 1, 2021.

2020 – 2021

David Bader (New Jersey Inst. of Technology) *The International Race to Exascale Supercomputing.* September 24, 2021.

Danny Price (International Centre for Radio Astronomy Research at Curtin Univ.) *AI and ETI: The Breakthrough Listen Search for Intelligent Life.* September 17, 2021.

VADM John J. Donnelly (US Navy (ret.)) *Ice Exercise (ICEX) 2007 – Research, Tactical Development, and Tragedy.* September 9, 2021.

Alison Criscitiello (Univ. of Alberta, Exec. Dir. Canadian Ice Core Lab) *Stories From the Ice: Perspectives From New Canadian Arctic Ice Cores.* September 3, 2021.

David Albright (Institute for Science and International Security) *Iran's Perilous Pursuit of Nuclear Weapons.* July 23, 2021.

George Galdorisi and Sam Tangredi (Naval Information Warfare Center Pacific and US Naval War College) *Algorithms of Armageddon: What Happens When We Insert AI Into Our Military Weapons Systems?* July 16, 2021.

LT Matthew Henricks (US Navy) *Analysis of Rapidly Printed Flexible Metamaterials for Microwave Weapon Defense.* July 9, 2021.

Cato Milder (Vanderbilt Univ.) *The Contribution of Uranium Workers to Radiation Epidemiology.* June 25, 2021.

CAPT Matthew "Beaker" Culp (CNO's Strategic Action Group, U.S. Navy) *Advantage at Sea – Prevailing With Integrated All-Domain Naval Power.* June 16, 2021.

Christian Brose (Chief Strategy Officer, Anduril Industries) *Disrupting National Defense: A Conversation With Christian Brose.* June 11, 2021.

Tuan Do (UCLA Galactic Center Group) *The Galactic Center: A Laboratory for the Study of the Physics and Astrophysics of Supermassive Black Holes.* June 4, 2021.

Roopa Unnikrishnan (Vontier Corporation) *Building an Innovation Culture in the Midst of Change.* May 28, 2021.

Jim Bellingham (Executive Director, Institute for Assured Autonomy, Johns Hopkins Univ.) *Autonomy at the Edge.* May 21, 2021.

Patrick K. O'Donnell (Historian and Author) *The Indispensables: Marblehead's Diverse Soldier-Mariners Who Shaped the Country, Formed the Navy, and Rowed Washington Across the Delaware.* May 19, 2021.

Jeff Hawkins (Numenta) *"A Thousand Brains: A New Theory of Intelligence" With Jeff Hawkins.* May 14, 2021.

Dan Esty (Director, Yale Center for Environmental Law and Policy) *America's Zero Carbon Action Plan.* May 7, 2021.

A.J. Simon and Hannah Goldstein (Lawrence Livermore National Lab) *The U.S. Energy System in the Age of Abundance.* April 30, 2021.

Jennifer Ackerman (Author) *The BIRD WAY: A New Look at How Birds Talk, Work, Play, Parent, and Think.* April 23, 2021.

Alexandra Samuel (Data Journalist and Tech Writer) *Neurodiversity and the Future of Work.* April 16, 2021.

Nicholas Pyenson (Smithsonian Institution) *Spying on Whales.* April 9, 2021.

Alison Hill (Institute for Computational Medicine, Johns Hopkins Univ.) *The Mathematics of Contagion: COVID-19 and Beyond.* April 2, 2021.

Paris R. von Lockette (Penn State Univ.) *Magneto-Active Composites, Multi-Field Processing, and a Quest for a Universal 3D Printer.* March 26, 2021.

Laura Micheletti Puaca (Christopher Newport Univ.) *The Search for "Scientific Womanpower": Challenging Gender Stereotypes in STEM in World War II and the Cold War.* March 19, 2021.

David W. Jordan (Case Western Reserve Univ.) *State of the Art Magnetic Resonance Imaging in Medicine.* March 5, 2021.

Martin Hellman (Stanford Univ.) *Rethinking National Security.* March 2, 2021.

Scott Ransom (NRAO) *Arecibo's Pulsar Legacy: nHz-frequency Gravitational Waves With NANOGrav.* February 26, 2021.

Ronald Ferguson (Harvard Kennedy School) *Why and How We Need to Engage Whole Communities in Child Development, Starting From Birth.* February 19, 2021.

Mark Maslin (Univ. College London) *How Celestial Mechanics Influenced Early Human Evolution and Dispersal.* February 12, 2021.

Thomas Wildenberg (Independent Historian and Scholar) *Charles Stark Draper and the Origins of Inertial Navigation.* February 5, 2021.

Stuart Russell (U.C. Berkeley) *Artificial Intelligence: A Modified Approach.* January 29, 2021.

Megan McKenna (Stanford Univ.) *Acoustic Ecology: How Sound Shapes the World Around Us.* January 22, 2021.

Jamie Holmes (Author and Future Tense Fellow, New America) *Section T, the Smart Fuse, and the Founding of APL.* January 15, 2021.

Matt Zullo (U.S. Navy (ret.)) *The U.S. Navy's on-the-Roof Gang.* January 8, 2021.

David Allison (Indiana Univ. School of Public Health-Bloomington) *Reproducibility and Replicability in Science.* December 11, 2020.

Kerri Phillips and Sylvie DeLaHunt (JHU/APL) *Breaking Down Barriers to Diversity and Inclusion in STEM.* December 4, 2020.

Lewis Dartnell (Univ. of Westminster) *ORIGINS: How the Earth Shaped Human History.* November 20, 2020.

Patrick K. O'Donnell (Historian and Author) *The Unknowns: The Untold Story of the Tomb of the Unknown Soldier and WWI's Most Decorated Heroes Who Brought Him Home.* November 13, 2020.

Mike Dahm (JHU/APL) *A Virtual Tour of China's Artificial Islands in the South China Sea.* November 6, 2020.

Min-Yang Chou (Univ. Corp. for Atmospheric Research (UCAR)) *The Persistent Impacts of the 2011 Tohoku Earthquake/Tsunami on Ionospheric Space Weather.* October 30, 2020.

Stephen Phillips (JHU/APL) *Two Midshipmen: The Founding of the U.S. Naval Academy.* October 23, 2020.

Edward S. "Ted" Brodkin M.D. (Univ. of Pennsylvania Perelman School of Medicine) *Developing a Program to Provide Support in Social Functioning for Adults on the Autism Spectrum.* October 16, 2020.

Douglas M. O'Reagan (Author) *Taking Nazi Technology: Allied Exploitation of German Science After the Second World War.* October 9, 2020.

David Kilcullen (Cordillera Applications Group) *The Dragons and the Snakes: How the Rest Learned to Fight the West.* October 2, 2020.

2019 – 2020

David Albright (Founder and President, Inst. for Science and International Security) *Taiwan's Nuclear Weapons Program: Its History, Dismantlement, and Lessons for Today.* September 23, 2020.

Peter W. Singer (Senior Strategic Fellow, New America Foundation) *Burn-In: The Real Robotics Revolution.* September 18, 2020.

Mario Livio (Astrophysicist and Author) *GALILEO and the Science Deniers.* September 11, 2020.

Jennifer Wilcox (Worcester Polytechnic Institute) *A Case for Carbon Dioxide Removal From Air.* September 4, 2020.

LT Brian Gureck (U.S. Navy) *Resolving Bearing Ambiguity With a Single Bio-Inspired Direction Finding MEMS Acoustic Sensor.* August 14, 2020.

Francis Gary Powers Jr. (Founder and Chairman Emeritus, The Cold War Museum) *Spy Pilot: Francis Gary Powers, the U-2 Incident, and a Controversial Cold War Legacy.* August 7, 2020.

James E. "JB" Brown III (National Test Pilot School) *Flying Lockheed's Stealth Fighters.* July 31, 2020.

Walter Gordon (MOOG Space and Defense Group) *Once There Was an Arrow.* July 24, 2020.

Norman Polmar (Analyst, Author, and Consultant) *Surprise! Western Intelligence and Warning Failures.* July 17, 2020.

Mark Kortepeter, MD, MPH (Univ. of Nebraska Medical Center) *Tales From Inside the Hot Zone.* June 26, 2020.

Leonard Rodberg (Queens College/CUNY) *Climate Change, Renewables, and Nuclear Energy: Which Path to Follow?* June 12, 2020.

Heather Massie (Fulbright Specialist, Writer/Producer/Performer of "HEDY! The Life & Inventions of Hedy Lamarr") *A Salon Lecture on Hedy Lamarr, Hollywood Screen Siren & Inventor of Spread Spectrum Technology, With Scenes From the Award-Winning, Internationally-Acclaimed "HEDY! The Life & Inventions of Hedy Lamarr."* March 6, 2020.

Martha Jones (Johns Hopkins Univ.) *Vanguard: What if Black Women Have Always Led the Movement for Women's Suffrage.* February 27, 2020.

James E. West (Johns Hopkins Univ.) *Piezoelectric and Electret Polymers.* February 21, 2020.

Tim Lattimer (Environmental Diplomat) *Global Climate Change and Why Local Action Is Vital.* February 14, 2020.

Bret Kugelmass (Managing Director, Energy Impact Center) *Nuclear Energy's Role in Achieving Deep Decarbonization to Reverse Climate Change.* February 7, 2020.

Garrett "Sack" Harencak (IRES Deputy Program Manager, Jacobs Missile Defense Group) *Five Myths of Nuclear Deterrence.* January 31, 2020.

Maj. Jarrod Robinson (US Marine Corps) *Protecting Our Nation's Warriors: Encapsulated Ceramic Spheres vs Monolithic Ceramic Plates for Body Armor Applications.* January 24, 2020.

Servio H. Ramirez (Temple Univ.) *Protection, Diagnosis, and Tissue Engineering of the Blood-Brain Barrier: Emerging Concepts to Improve Outcomes in Civilian and Military Traumatic Brain Injury.* January 17, 2020.

Magnus Nordenman (Consultant and Author) *The New Battle for the Atlantic: Emerging Naval Competition With Russia in the Far North.* January 10, 2020.

Lt. Gen. Steve Kwast (USAF ret.) *The Space Force? Why? When? What For?* January 3, 2020.

David Sing (Bloomberg Distinguished Prof. of Astrophysics, Johns Hopkins Univ.) *Hubble's Panchromatic Comparative View of Exoplanet Atmospheres.* December 20, 2019.

Dian Olson Belanger (Historian and Author) *Science, Politics, and Peace: Antarctica and the International Geophysical Year.* December 13, 2019.

Sufi Zafar (IBM T. J. Watson Research Center) *CMOS Compatible Chemical Sensors for Healthcare Applications.* December 11, 2019.

John O'Hara (NSA (ret.)) *Analysis of Soviet Space and Missile Programs During the Early Cold War.* December 6, 2019.

Nour E. Raouafi (JHU/APL) *Parker Solar Probe: First Discoveries and Outlook of the Mission.* December 2, 2019.

Robert Leonhard (JHU/APL) *Visions of Apocalypse: How Beliefs About the End Times Affect International Relations.* November 22, 2019.

Toshi Yoshihara (Center for Strategic and Budgetary Analysis (CSBA)) *Chinese Seapower.* November 15, 2019.

Stephen Moore (Author and Journalist) *UNCOMMON VALOR: Recon Company Medal of Honor Heroes of FOB-2.* November 8, 2019.

Lawrence Goldstone (Author) *Going Deep: John Philip Holland and the Invention of the Attack Submarine.* November 1, 2019.

David Blodgett (JHU/APL) *Optical Imaging of the Brain: Is There Really Anything to See?* October 25, 2019.

Larrie D. Ferreiro (George Mason Univ.) *Brothers at Arms: American Independence and the Men of France and Spain Who Saved It.* October 18, 2019.

Dr. Etta Pisano, M.D., FACR (Beth Israel Deaconess Medical Center) *The Tomosynthesis Mammographic Imaging Screening Trial (TMIST) – A Bridge to Personalized Breast Cancer Screening.* October 16, 2019.

Héctor L. Díaz (Hispanics In History Cultural Organization) *The Hispanic Assistance to the American Revolution.* October 11, 2019.

Andrés Muñoz-Jaramillo (Southwest Research Institute) *How the Hemispheric Polar Field Reversal Sets the Timing and Shape of the Solar Cycle.* October 9, 2019.

Dave "Bio" Baranek (Author, "TOPGUN Days") *Topgun and Tomcats: High Explosives, Type-a Personalities, and Prandtl–Meyer Expansion Fans.* October 4, 2019.

2018 – 2019

Mojie Crigler (END Fund) *Under the Big Tree: Extraordinary Stories From the Movement to End Neglected Tropical Diseases.* September 27, 2019.

CAPT Mercedes Benitez-McCrary, Dr.HSc, MA CCC-SLP (Chief Professional Officer - Chief Therapist Officer, United States Public Health Service) *"Puentes Y Verjas" – Hispanic Health.* September 20, 2019.

Eric Haseltine (Analyst and Consultant) *The Spy in Moscow Station: A Counterspy's Hunt for a Deadly Cold War Threat.* September 13, 2019.

Muhammad Fraser-Rahim (Quilliam International) *Alternative Narratives to Violent Extremism: Case Study Examples on Rehabilitation in the US and Overseas.* September 4, 2019.

Norman Polmar, RADM Thomas Brooks, and George Fedoroff (Author & Analyst, US Navy (ret.), and ONI) *Admiral Gorshkov: The Man Who Challenged the U.S. Navy.* August 30, 2019.

Jeffrey Kosseff (U.S. Naval Academy) *The Twenty-Six Words That Created the Internet.* August 23, 2019.

Ernie Snowden (U.S. Navy (ret.)) *Winged Brothers: Naval Aviation as Lived by Ernest and Macon Snowden.* August 16, 2019.

Mr. Douglas Loverro (Deputy Assistant Secretary of Defense, Space Policy (Ret.)) *The History of Space in National Security.* August 5, 2019.

Douglas Burnett (Chief Counsel, Maritime Administration, US Dept. of Transportation) *The "Cloud" Is Beneath the Sea: Why International Law of the Sea Is a Critical Factor in the Astonishing Growth of Submarine Cables.* August 2, 2019.

James "Nick" Ashworth (NAVAIR Cyber Test and Evaluation Group) *My Experiences Hacking Automobiles, Ships, and Airplanes.* July 12, 2019.

Walter Gordon (Niagara Aerospace Museum & MOOG Space and Defense Group) *Project Gemini: Unsung Hero of Neil Armstrong's One Small Step.* June 25, 2019.

Kevin Baker (Author) *America the Ingenious: How a Nation of Dreamers, Immigrants, and Tinkerers Changed the World.* June 21, 2019.

John Astin (Theatre Program Director, JHU Homewood) *Knowledge and Wisdom.* June 14, 2019.

Charles F. Delwiche (Univ. of Maryland College Park) *Social Diversity in Humans and Biological Diversity in Algae: Implications for Resilience of Communities.* June 7, 2019.

Capt. John E. Jackson (U.S. Navy (ret.)) *One Nation, Under Drones.* May 31, 2019.

Robert Leonhard and Stephen Phillips (JHU/APL) *"Little Green Men": A Primer on Modern Russian Unconventional Warfare, Ukraine 2013-2014.* May 24, 2019.

Sally Mott Freeman (Author) *The Jersey Brothers: A Missing Naval Officer in the Pacific and His Family's Quest to Bring Him Home.* May 17, 2019.

Victoria Meadows (University of Washington & NExSS) *Prospects for Characterizing Terrestrial Exoplanets With the James Webb Space Telescope.* May 10, 2019.

Ramesh Varma (Northrup Grumman (ret.)) *Coming to America: Challenges for an Asian-American.* May 3, 2019.

Joseph Blau (Naval Postgraduate School) *Measurements and Analysis of Ship-Induced Optical Turbulence on an Arleigh Burke Class Destroyer.* April 26, 2019.

Jeff Suzuki (Brooklyn College) *Patently Mathematical, or How I Lost a Billion Dollars in My Spare Time.* April 19, 2019.

Edward J. Marolda (Senior Historian, U.S. Navy (ret.)) *Admirals Under Fire: U.S. Naval Leaders and the Vietnam War.* April 12, 2019.

Dr. John P. Hussman (Hussman Institute for Autism) *The Neurobiology of Autism and Implications for Presuming Competence.* April 10, 2019.

Robert R. Leonhard (JHU/APL) *Fighting by Minutes: Time and the Art of War.* April 5, 2019.

Travis Gault and Jeffrey Dunne (JHU/APL) *The Impact of APL's Ongoing Support to US Navy Commander, Task Force 70 (CTF-70).* March 29, 2019.

Anna L. Buczak (JHU/APL) *Predicting the Future: IARPA Geopolitical Forecasting Challenge and Crystal Cube.* March 22, 2019.

Capt. James Howe (U.S. Coast Guard (ret.)) *Securing the Border: Lessons Learned From the Maritime War on Drugs.* March 15, 2019.

Bill Miller (CFA) *The Man Who Beat the Stock Market 15 Years in a Row.* March 14, 2019.

Sean McFate (NDU and Georgetown Univ.) *The New Rules of War.* March 8, 2019.

CPT Todd Howe (U.S. Army) *Thermodynamic Analysis of a Liquid Air Energy Storage System.* March 1, 2019.

Robert Lightfoot Jr. (NASA (ret.); President, LSINC Corp.) *Lessons Learned From Leading NASA.* February 22, 2019.

Antero Pietila (Author) *The Unknown Johns Hopkins – A Pragmatic Opportunist.* February 15, 2019.

The Honorable Catherine Pugh (Mayor of Baltimore) *Black History Month Keynote Address.* February 11, 2019.

Lester Spence (Johns Hopkins University) *A Realist Afrofuturist Account of Geopolitical Change.* February 8, 2019.

Peter W Singer (New America) *LikeWar: The Weaponization of Social Media.* February 1, 2019.

John O'Hara (NSA (Ret.)) *Space Age Intelligence … Cold War to Hot War.* January 25, 2019.

Richard M. (Dickie) George (JHU/APL) *The Role NSA Played in the Development of DES.* January 18, 2019.

Ross Merlin (DHS NCC Shares Program Manager) *Interoperable Emergency Communications Without Vulnerable Infrastructure – SHARES.* December 14, 2018.

Alan Stern (Southwest Research Institute) *New Horizons: The Farthest Exploration of Worlds.* December 7, 2018.

Sauvik Das (Georgia Tech) *Social Cybersecurity: Reshaping Security Through an Empirical Understanding of Human Social Behavior.* November 30, 2018.

Ashley Ater Kranov (School of Electrical Engineering and Computer Science, Washington State University and President, Global Professional Skills Assessment) *What Can the US Learn From Women's Decisions to Pursue and Persist in Engineering in Diverse Predominantly Muslim Settings?* November 16, 2018.

Dava Sobel (Author) *The Glass Universe: Where Astronomy and Physics Joined Forces.* November 9, 2018.

Dale F. Gray (International Monetary Fund (retired)) *Using Tools From Physics, Feynman, and Finance to Model Macrofinancial Risks in Economies.* November 2, 2018.

Peter A. Wilson (RAND Corp.) *U.S. Military Capabilities and Forces for a Dangerous World–Rethinking the U.S. Approach to Force Planning.* October 26, 2018.

Harlan Ullman (CNIGuard Ltd. and The Killowen Group) *Anatomy of Success: Why a Brains-Based Approach to Strategic Thinking Can Win Wars.* October 19, 2018.

Stephen A. Bourque (School of Advanced Military Studies, Fort Leavenworth) *Challenging Traditional Narratives: Writing Beyond the Beach.* October 16, 2018.

Kimberly Ruiz and Christopher Wood (JHU/APL) *The Impact of APL's Ongoing Support to US Navy Commander, Task Force 70 (CTF-70).* October 12, 2018.

Yarieska M. Collado-Vega (NASA Goddard Space Flight Center) *Space Weather Research and Forecasting Capabilities at the NASA Community Coordinated Modeling Center (CCMC).* October 5, 2018.

2017 – 2018

David Winkler (Naval Historical Foundation) *Incidents at Sea.* September 28, 2018.

Jeff Hawkins (Numenta Inc.) *Location, Location, Location: A Framework for Intelligence and Cortical Computation.* September 21, 2018.

Scott Hoschar and Beau Backus (Middle Atlantic Area Frequency Coordination Office and NOAA National Environmental Satellite, Data, & Information Service) *Defense of the Electro-Magnetic Spectrum.* September 14, 2018.

Justin Conrad (Univ. of North Carolina at Charlotte) *Gambling and War: Risk, Reward, and Chance in International Conflict.* September 7, 2018.

David Priess (Author and Commentator) *The President's Book of Secrets.* August 24, 2018.

Dennis Conti (Chair, AAVSO Exoplanet Section) *Amateur Astronomer Participation in the TESS Exoplanet Mission.* August 17, 2018.

Captain Drake Brewster (U.S. Army) *Actinide Isotope Ratios Measured by Resonance Ionization Mass Spectrometry: Optimization of Ionization Schemes and Demonstration Using Nuclear Fallout.* July 13, 2018.

Stephen Phillips (JHU/APL) *Operation Earnest Will.* June 29, 2018.

David Taubenheim (JHU/APL) *(Repeat Presentation) Can You Hear Me Now? Advances in Audio Collection Technology, Machine Learning, and Subterfuge (SECRET Clearance Required).* June 27, 2018.

Trent Hone (Consultant) *Learning War: The Evolution of Fighting Doctrine in the U.S. Navy, 1898-1945.* June 22, 2018.

Taylor Baldwin Kiland (Author) *Lessons From the Hanoi Hilton.* June 15, 2018.

David Brin (Author and Futurist) *Opportunities, Dangers and Destiny in the Solar System … and Beyond.* June 8, 2018.

David Taubenheim (JHU/APL) *Can You Hear Me Now? Advances in Audio Collection Technology, Machine Learning, and Subterfuge (SECRET Clearance Required).* June 1, 2018.

Elyse Zorn Karlin (Journalist, Museum Curator, and Art Historian) *Out of This World! Jewelry in the Space Age.* May 25, 2018.

Marc Kolodner and Leo Morris (JHU/APL) *Janney Energize: Remote Sensing Solutions for Enhancing Situational Awareness: Part 2.* May 18, 2018.

Marc Kolodner and Leo Morris (JHU/APL) *Janney Energize: Remote Sensing Solutions for Enhancing Situational Awareness: Part 1.* May 11, 2018.

Mansur Hasib (Univ. of Maryland, Univ. College) *Cybersecurity Leadership: The Key to Organizational Success.* May 4, 2018.

George Bibel (Univ. of North Dakota) *Plane Crash: The Forensics of Aviation Disasters.* April 27, 2018.

Tom Glenn (Author) *The Battle of Dak To: The Cassandra Effect.* April 20, 2018.

Todd Harrison (Center for Strategic and International Studies (CSIS)) *Escalation and Deterrence in the Second Space Age.* April 13, 2018.

Toni Hiley (CIA Museum Director) *The Art of Intelligence.* April 6, 2018.

Max Hardberger (Vessel Extractions LLC) *Under a False Flag: How Smugglers, Terrorists, and Thieves Use Vessels Under Flags of Convenience to Further and Conceal Illicit Activity.* March 30, 2018.

Chris Singer (NASA Deputy Chief Engineer (Ret.)) *The Engine of Possibility: Accelerating Development.* March 23, 2018.

Mary Hallward-Driemeier (World Bank Group) *Trouble in the Making? The Future of Manufacturing-Led Development.* March 20, 2018.

Brett Denevi (JHU/APL) *The New Moon.* March 9, 2018.

Jared Der-Yeghiayan (Homeland Security Investigations) *Silk Road Online Black Marketplace Investigative Case Briefing.* March 2, 2018.

Ambassador (retired) Joseph M. DeThomas (Pennsylvania State Univ.) *Maintaining Equilibrium on the North Korean Nuclear and Missile Crisis.* February 23, 2018.

Daniel Haulman (Air Force Historical Research Agency) *The Tuskegee Airmen: The First African American Pilots in American Military Service.* February 16, 2018.

Carey Lisse (JHU/APL Space Exploration Sector) *What We Know and Don't Know About 'Oumuamua.* February 15, 2018.

Howard Eisner (Professor Emeritus, George Washington Univ.) *Thinking Outside the Box, With Examples and APL-related Stories.* February 9, 2018.

LT Chester H. Hewitt III (Aegis BMD Weapon System Directorate, U.S. Navy) *Analysis of Broadband Metamaterial Shielding for Counter-Directed Energy Weapons.* February 2, 2018.

CAPT Scott Sirois (NOAA Corps) *The NOAA Corps: Celebrating a Century of Service (1917-2017).* January 19, 2018.

Alan Zimm (JHU/APL) *A Battle Badly Fought: How Wargaming and Human Factors Lost the Battle of the River Plate.* January 12, 2018.

Catherine Asaro (Author and SIGMA member) *Science Fiction Goes to Washington.* January 5, 2018.

Chris Taylor (Georgetown Univ.) *Hacking for Defense – Or – Harnessing the National Security Talent of America's Graduate Students.* December 15, 2017.

Robert Fischell (Fischell Biomedical) *APL Space Technology Leads to Biomedical Devices.* December 8, 2017.

Beau Backus (NOAA National Environmental Satellite, Data, & Information Service) *The Electro-Magnetic Spectrum: Is It Big Enough for All of Us?* December 1, 2017.

Brad Cenko (NASA Goddard Space Flight Center) *The Dawn of Multi-Messenger Astrophysics: Gravitational Waves and Light Together at Last.* November 17, 2017.

Tom Glenn (Author, "Last of the Annamese") *Bitter Memories: The Fall of Saigon.* November 10, 2017.

Jeffrey Bub (Univ. of Maryland) *Bananaworld: Quantum Mechanics for Primates.* November 3, 2017.

Adam Ruben (Science Channel, "Outrageous Acts of Science") *Public Perception of Science: Lessons From a Dead Sheep.* October 27, 2017.

William Hogan (Founder and Past Executive Director of California's Innovation Hub for Defense, Energy and Aerospace (iDEA Hub)) *From Innovation to Actualization: A Perspective From Silicon Valley.* October 20, 2017.

John Krakauer (Johns Hopkins School of Medicine) *What Are We Asking When We Ask How the Brain Works.* October 13, 2017.

Ann Todd (Author) *OSS Operation Black Mail.* October 9, 2017.

2016 – 2017

Sharon Weinberger (Author) *The Imagineers of War: The Untold Story of DARPA, the Pentagon Agency That Changed the World.* September 22, 2017.

Patrick Peplowski and Rachel Klima (JHU/APL) *Mercury's Dark Secret.* September 8, 2017.

Max Bergmann (Senior Fellow, Center for American Progress) *Rethinking Russian Active Measures.* September 1, 2017.

Brock Wester and Nathan Crone (JHU/APL and JHU School of Medicine) *Individual Finger Control of the Modular Prosthetic Limb (MPL) Using Electrocorticography (ECoG).* August 25, 2017.

Nour E. Raouafi and Nicola J. Fox (JHU/APL) *Parker Solar Probe: The Mission's Deep Roots in the History of Solar Eclipses.* August 4, 2017.

Dan Green (The Washington Institute for Near East Policy) *In the Warlords' Shadow: Special Operations Forces, the Afghans, and Their Fight Against the Taliban.* July 21, 2017.

Stephen Phillips (National Security Analysis Department, JHU/APL) *Developing the Proximity Fuze.* June 30, 2017.

Dean Hamer (Scientist Emeritus, National Institutes of Health; Co-Producer and Director, "A Place in the Middle") *Queer Science.* June 23, 2017.

Chunsheng Wang (Univ. of Maryland) *Advanced Materials for Li-Ion Batteries: Applications in EV Technology and the Impact on DoD Systems.* June 16, 2017.

Sandy Grimes (CIA (Ret.)) *Circle of Treason: A CIA Account of the Traitor Aldrich Ames and the Men He Betrayed.* June 9, 2017.

Kenneth Johnson (Writer, Producer, Director) *Using Popular Science Fiction to Promote Thought, Tolerance and Unity.* June 2, 2017.

Ravi F. Saraf (Chemical and Biomolecular Engineering, Univ. of Nebraska – Lincoln) *Single Electron and Single Molecule Devices: Nanoscience to Nanotechnology.* May 26, 2017.

Russell J. Hemley (George Washington Univ.) *A New World of Materials in Extreme Environments.* May 19, 2017.

Michael Bourke (Chief, Behavioral Analysis Unit, United States Marshals Service) *The Psychology Behind Child Sex Offenders.* May 12, 2017.

Mitchell Zuckoff (Boston University) *13 Hours: The Inside Account of What Really Happened in Benghazi.* May 5, 2017.

Mark Patrick (Chief, Information Management Division, Joint Staff Secretariat) *A Holistic Approach to Records and Information Management.* April 28, 2017.

Chris Gould (NC State Univ.) *Are Fundamental Constants Actually Constant? Nuclear Physics and the Oklo Natural Nuclear Reactors.* April 21, 2017.

Nick Jellicoe (Naval Institute Press) *JUTLAND: The Unfinished Battle.* April 14, 2017.

Barry Gordon (Johns Hopkins and Johns Hopkins Medicine) *Autism: What Is It, What Can Be Done, What Might Be Done?* April 7, 2017.

Hans Mair, Bob Ferguson, Mary Anne Espenshade, Danielle Zack, Jennifer Hedlund, Steven Lutz, David Steigerwald, and John Meyer (JHU/APL) *A Tribute to Scott Joplin.* March 31, 2017.

Alice Bowman (JHU/APL) *Reaching for New Horizons.* March 24, 2017.

Col. William Reeder Jr. (U.S. Army Ret.) *Through the Valley: My Captivity in Vietnam.* March 17, 2017.

Gary Ackerman (National Consortium for the Study of Terrorism and Responses to Terrorism (START) at Univ. of Maryland) *More Bang for the Buck? : Assessing the Threat of Terrorists and Emerging Technologies.* March 3, 2017.

Freeman Hrabowski (President, University of Maryland Baltimore County) *Holding Fast to Dreams: Creating a Climate of Success for All Students.* February 24, 2017.

John R. Benedict Jr. (JHU/APL) *Power and Warfighting in the 21st Century.* February 17, 2017.

George Percivall (CTO and Chief Engineer, Open Geospatial Consortium) *Innovations in Geodata Management, Integration and Analytics From the Open Geospatial Consortium.* February 10, 2017.

John Park (Harvard Kennedy School Belfer Center) *The Sanctions Paradox: North Korea, Inc.'s Accumulated Learning in Evading Sanctions.* February 3, 2017.

Timothy J. Jorgensen (Georgetown Univ.) *Strange Glow: The Story of Radiation.* January 27, 2017.

Martin Libicki (U.S. Naval Academy) *Cyberspace in Peace and War.* January 20, 2017.

Jim Cole (Special Agent, Cyber Crimes Center, Child Exploitation Investigations Unit, DHS) *Beyond the Image: Using Technology to Identify and Rescue Children of Child Exploitation.* January 13, 2017.

Col. Douglas Macgregor (U.S. Army Ret.) *Margin of Victory: Five Battles That Changed the Face of Modern War.* January 6, 2017.

VADM Mark Fox (U.S. Navy Ret., VP Customer Relations, Huntington-Ingalls Industries) *Reflections of a Carrier Aviator From 1980 to 2016.* December 16, 2016.

Alan D. Zimm (JHU/APL) *The Perils of Technological Transformation: A Critical Analysis of the Attack on the Fleet at Pearl Harbor.* December 7, 2016.

MG Bob Scales (U.S. Army Ret.) *Scales on War: The Future of America's Military at Risk.* December 2, 2016.

Donald M. Goldstein (Emeritus Professor, Univ. of Pittsburgh) *Pearl Harbor in the Perspective of 75 Years.* November 30, 2016.

Alfred Scott McLaren (U.S. Navy Ret., Naval Institute Press) *Silent and Unseen: On Submarine Patrol During the Cold War.* November 16, 2016.

Andrew Jampoler (U.S. Navy Ret., Naval Institute Press) *Embassy to the Eastern Courts: America's Secret First Pivot Toward Asia, 1832 – 1837.* November 11, 2016.

Bob Bailey (Behavior by Bailey) *A Brief History and Some Applications of Terrestrial, Aerial, and Aquatic Trained Animal Behavior Systems.* November 4, 2016.

Michael J. Neufeld (Smithsonian Institution) *The Difficult Birth of NASA's Pluto Mission.* October 28, 2016.

Antonio DeSimone and Nicholas Horton (JHU/APL) *Sony's Nightmare Before Christmas: The 2014 Cyber Attack.* October 21, 2016.

Allison Ratto (Children's National Health System) *Autism's Full Spectrum: The Clinical Science of Identification and Treatment.* October 14, 2016.

James Ira Thorpe (NASA Goddard Space Flight Center) *LISA Pathfinder and the Road to Space-Based Gravitational Wave Observatories.* October 7, 2016.

2015 – 2016

Vincent P. Manno (Olin College of Engineering) *Rethinking Foundational Engineering Education.* September 30, 2016.

BG Robert S. Spalding III (U.S. Air Force) *Economic Elements of Chinese Competition.* September 23, 2016.

Jose C. Florez MD PhD (Massachusetts General Hospital) *Clinical Translation of Genetic Predictors for Type 2 Diabetes.* September 16, 2016.

Paul Jaffe (Naval Research Laboratory) *The Opportunity of Space Solar.* September 9, 2016.

Michael D. Griffin (Chairman and CEO, Schafer Corp.) *Delta 180: Origins and Significance in Missile Defense and Beyond.* September 8, 2016.

Joshua M. Epstein (JHU Department of Emergency Medicine and Center for Advanced Modeling) *Agent Zero and Generative Social Science.* September 2, 2016.

Franco Einaudi (Director, Earth Sciences Division Ret., NASA Goddard) *Climate Change and Its Challenges.* August 25, 2016.

Michael A. Caruso (Independent Consultant) *EMP and the Concern for Data Center Protection.* July 15, 2016.

MG Richard J. Cripwell CBE (Defence Attaché and Head of the British Defence Staff in the United States) *Better Together? – Lessons and Reflections From a Career in Coalitions.* June 24, 2016.

Emily Riehl (JHU Mathematics Dept.) *A Solution to the Stable Marriage Problem.* June 22, 2016.

Sarah Bergbreiter (Univ. of Maryland College Park) *Tiny Leaps for Robot Kind: Mixing Microfabrication and Robotics.* June 17, 2016.

Jeff Plescia (JHU/APL) *Lost Landers – Unsolved Mysteries.* June 10, 2016.

Charles Clark (Joint Quantum Institute, Univ. of Maryland and National Institute of Standards and Technology) *How Quantum Mechanics Cracked the Nuclear Code.* June 3, 2016.

Dwight Hughes (Naval Institute Press) *A Confederate Biography: The Cruise of the CSS Shenandoah.* May 20, 2016.

K. T. Ramesh (JHU Decker Professor of Science & Engineering and Director, Hopkins Extreme Materials Institute) *Keeping Your Head in the Game: The Dynamics of Traumatic Brain Injury.* May 13, 2016.

Janelle Wong (Univ. of Maryland, Asian American Studies Program and Resource Center) *Asian Americans and the 2016 Election.* May 6, 2016.

Gene J. Blatt (Hussman Institute for Autism) *The Science of Autism.* April 29, 2016.

John C. Mather (NASA Goddard Space Flight Center, 2006 Nobel Prize for Physics) *Beneficial Catastrophes From the Big Bang to the End: How Far Can We Go?* April 26, 2016.

Shawn Usman (National Geospatial Intelligence Agency) *The Antineutrino Global Map (AGM).* April 22, 2016.

Andrew Jampoler (Naval Institute Press) *ADAK: The Rescue of Alfa Foxtrot 586.* April 15, 2016.

Christine Fox (JHU/APL) *X11 Strategy Analysis – What We Learned in 2015.* April 8, 2016.

William Jones (Princeton University) *The Universe as a Lab for Fundamental Physics: Results From Spider and Future Long-Duration Stratospheric Balloon Missions.* April 1, 2016.

Richard Danzig (JHU/APL) *The National Security Consequences of Increasing Technological Speed of Change, Complexity, and Coupling.* March 25, 2016.

Kimberly Scott (Arizona State University) *Becoming Our Selves in This Digital Age.* March 21, 2016.

Philip Graff (JHU/APL) *The Chirp Heard 'Round the World: Gravitational Waves, LIGO, and a New Era of Astronomy.* March 18, 2016.

ADM Michelle Howard (Vice Chief of Naval Operations, U.S. Navy) *Cyber War App.* March 4, 2016.

Philip Mudd (Consultant; Central Intelligence Agency Ret.) *The HEAD Game: Become a High Efficiency Analytic Decision Maker.* March 4, 2016.

Hans Mair (JHU/APL) *U-35 Hurrah, Hurrah, Hurrah!* February 26, 2016.

Wanda Austin (Aerospace Corp.) *Diversity and STEM – Building a More Inclusive Future.* February 19, 2016.

LtCol Seth Folsom (U.S. Marine Corps) *Where Youth and Laughter Go: With "The Cutting Edge" in Afghanistan.* February 12, 2016.

LTG Vincent Stewart (U.S. Marine Corps; Director, Defense Intelligence Agency) *An Evolving Defense Intelligence Enterprise.* February 5, 2016.

Pierre Thuot (JHU/APL) *The Power of Teamwork Knows No Limits – AKA Murphy's Law at Mach 25.* January 29, 2016.

Harlan Ullman (The Killowen Group) *A Brains-Based Approach to Strategic Thinking.* January 15, 2016.

BG Harold "Buck" Adams (U.S. Air Force Ret., The Potomac Institute) *Operating at the Edge of Space at 2,200 MPH.* January 8, 2016.

Xuanhong Cheng and James C. M. Hwang (Lehigh University) *Broadband Electrical Detection of Individual Biological Cells.* December 11, 2015.

J. Michael Wenger (Author) *No One Avoided Danger: NAS Kaneohe Bay and the Japanese Attack of 7 December 1941.* December 10, 2015.

Marc Wortman (Author) *How the Navy Learned to Fly in World War I.* December 4, 2015.

David Goldstein (Naval Research Laboratory) *Acoustic Black Holes in the Laboratory.* November 20, 2015.

Daniel Friedman (National Renewable Energy Laboratory) *Progress and Opportunities for Next-Generation Ultrahigh-Efficiency Multijunction Solar Cells.* November 13, 2015.

James N. Miller (JHU/APL) *When Major Powers Meet in Cyberspace: W(h)ither Strategic Stability?* October 30, 2015.

Charles Neimeyer (Author) *War in the Chesapeake: The British Campaigns to Control the Bay, 1813-1814.* October 26, 2015.

David McQueeney (IBM Research) *The IBM Global Technology Outlook.* October 23, 2015.

ADM Nirmal Verma (Indian Navy Ret., U.S. Naval War College) *Emerging Maritime Challenges in the Indian Ocean Area: An Indian Perspective.* October 16, 2015.

GEN Bruce Carlson (U.S. Air Force Ret.; Former Director, NRO) *Learning Leadership – We Can All Get Better.* October 9, 2015.

Pablo Iglesias (JHU ECE Cellular Signaling and Control Laboratory) *Biased Excitable Networks: How Cells Direct Motion in Response to Gradients.* October 2, 2015.

2014 – 2015

Jason Benkoski (JHU/APL) *Mimicking Skin: Multifunctional Coatings That Adapt to the Environment and Undergo Self-Repair.* September 25, 2015.

LTG Rhett Hernandez (U.S. Army Ret., Army Cyber Institute, CyberLens LLC) *Cyberspace – An Operational Domain With Significant Challenges and Unprecedented Opportunity.* September 18, 2015.

Brian R. McEnany (Author) *For Brotherhood and Duty: The Civil War History of the West Point Class of 1862.* September 4, 2015.

Bryan Jackson (IBM Research – Almaden) *IBM TrueNorth: A Low-Power Brain-Inspired Computing Processor and Ecosystem.* August 20, 2015.

Michael Eisenstadt (The Washington Institute for Near East Policy) *Martyrdom, Victory, and Expediency in the Decisionmaking of the Islamic Republic of Iran (IRI).* August 14, 2015.

Amb. John M. Koenig (U.S. Department of State) *A Cyprus Solution in 2016? Why This Intractable Conflict Can Be Solved After a Half Century, and What It Could Mean for the United States.* July 30, 2015.

Ignition Grants Winners (JHU/APL) *Ignition Grants Intelligent Systems Center Challenge.* July 21, 2015.

2015 Hart Prize Winners (JHU/APL) *The Hart Prizes for Excellence in Independent Research and Development.* July 10, 2015.

Jane Rigby (NASA Goddard Space Flight Center) *Galaxy Evolution Over Cosmic Time.* June 26, 2015.

Ignition Grants Winners (JHU/APL) *Ignition Grants Mobile Apps Challenge.* June 23, 2015.

Donna Riley (Virginia Tech) *LeChatelier and Warhol: Queering the Conventional Career Trajectory in STEM.* June 19, 2015.

S. Alan Stern (Southwest Research Institute) *New Horizons: Nothing Like It in the World – The Exploration of Pluto: July 2015.* June 12, 2015.

Thom LaBean (North Carolina State Univ.) *Engineering Molecular Assembly for 3D Electronics.* June 5, 2015.

Rafael Yuste (Columbia Univ. Neurotechnology Center) *The Novel Neurotechnologies: Simultaneous 3D All-Optical Imaging and Activation of Neurons in Living Brains.* May 29, 2015.

Geoffrey Ling (DARPA Biological Technologies Office) *The Future of Medicine.* May 22, 2015.

Dwight R. Messimer (Author) *The Baltimore Sabotage Cell and the U-Boat Deutschland, 1915-1918.* May 19, 2015.

Michael S. Teitelbaum (Harvard Law School) *Is the U.S. Falling Behind in Science and Engineering? Strengths, Structural Instabilities, and Perennial Controversies.* May 15, 2015.

John A. Rogers (Univ. of Illinois at Urbana-Champaign) *Materials for Unusual Forms of Electronics: From 3D Circuits to Water Soluble Sensors.* May 8, 2015.

Stamatios M. Krimigis (JHU/APL) *Being There at Inception: From v-2s to Transits to Solar Probe – APL in Space.* May 1, 2015.

Joel S. Wit (U.S.-Korea Institute at JHU School of Advanced International Studies) *Game Change on the Peninsula? Thinking About North Korea's Nuclear Futures.* April 24, 2015.

LtCol William Hagestad II (U.S. Marine Corps Ret., Red Dragon Rising) *International Binary Battlefield – Focus the People's Republic of China.* April 21, 2015.

William Braniff (National Consortium for the Study of Terrorism and Responses to Terrorism (START)) *Al Qaeda's Jihadism – ISIL's Jihadism: The Making and Remaking of a Modern Ideology.* April 17, 2015.

Robert Ehrlich (George Mason Univ.) *The Hunt for the Tachyon.* April 10, 2015.

Mary Cummings (Duke Univ. Humans and Autonomy Laboratory) *Man vs. Machine or Man + Machine?* March 27, 2015.

James L. Green (NASA Headquarters) *Thaddeus Lowe: Mr. Lincoln's Chief Aeronaut.* March 13, 2015.

LTG Ronnie Hawkins Jr. (U.S. Air Force; Director, Defense Information Systems Agency) *Mentoring and Developing Diverse Scientists and Engineers.* March 9, 2015.

Ignition Grants Winners (JHU/APL) *Ignition Grants Fall 2014 Healthcare Edition.* March 6, 2015.

Christine Fox (JHU/APL) *X11 Strategy Analysis – What Is It, and What Did We Learn?* February 13, 2015.

Samuel M. Stavis (National Institute of Standards and Technology) *Nanofabricated Devices, Optical Nanoscopy, and Nanoscale Particles.* January 30, 2015.

John Steinbruner (Director, Center for International and Security Studies at Maryland (CISSM)) *Anticipating Climate Change Mitigation.* January 23, 2015.

Philip Koopman (Carnegie-Mellon Univ.) *Case Study of Toyota Unintended Acceleration and Software Safety.* January 16, 2015.

VADM Walter E. Carter Jr. (U.S. Naval Academy) *Producing Future Leaders of Consequence.* January 9, 2015.

Thomas Dolby Robertson (JHU) *The Road to MIDI Hell Is Paved With Great Inventions.* January 5, 2015.

Steven L. Rolston (Univ. of Maryland) *Where Is My Quantum Computer?* December 12, 2014.

Michael Kelly (JHU/APL) *Multi-Spectral Imaging System: Background and Status.* December 5, 2014.

Mason Peck (Cornell Univ.) *Making Space: Opportunities to Transform Space Science and Exploration Thanks to the Commoditization of Spacecraft.* November 21, 2014.

Neal S. Bergano (TE Connectivity Subcom) *Undersea Fiber Optic Cables – Enabling a Connected World.* November 14, 2014.

Beth Laura O'Leary, Milford Wayne Donaldson, P. J. Capelotti, and Ann Garrison Darrin (Univ. of New Mexico, Milford Wayne Donaldson FAIA Inc., Pennsylvania State Univ., and JHU/APL) *Archaeology and Heritage of the Human Movement Into Space.* November 7, 2014.

Nicky Fox (JHU/APL) *Solar Probe Plus: Humanity's First Visit to Our Star.* October 24, 2014.

Mica R. Endsley (U.S. Air Force Chief Scientist) *Situation Awareness: Current and Future Challenges.* October 17, 2014.

Ben Shneiderman (Univ. of Maryland) *Information Visualization for Knowledge Discovery: Big Insights From Big Data.* October 10, 2014.

Tomás Palacios (Massachusetts Inst. of Technology) *Atom-Thick Materials for the Next Revolution in Electronics.* October 6, 2014.

2013 – 2014

Ignition Grants Winners (JHU/APL) *Ignition Grants Central Spark Edition.* September 19, 2014.

Hassan Abbas (National Defense Univ.) *The Taliban Revival: The India-Pakistan Nuclear Rivalry and U.S. Drawdown in Afghanistan.* September 12, 2014.

Amanda Simpson (Army Energy Initiatives Task Force) *Intersection of Test Flight, Energy, and Vacuum Tubes.* June 18, 2014.

2014 Hart Prize Winners (JHU/APL) *The Hart Prizes for Excellence in Independent Research and Development.* June 13, 2014.

Stuart W. Leslie (JHU Dept. of History of Science and Technology) *Spaces for the Space Age: Southern California's Architecture of Innovation.* May 30, 2014.

Herbert S. Lin (National Research Council) *Reflections on Cyber Warfare: Some Unresolved Policy and Strategic Issues.* May 9, 2014.

Barton P. Miller (Univ. of Wisconsin – Madison) *Software Assurance Marketplace.* May 2, 2014.

Ignition Grants Winners (JHU/APL) *Ignition Grants Fall 2013 Edition.* April 25, 2014.

Dawn Biehler (Univ. of Maryland, Baltimore County) *Back-Alley Ecology: Rats, Homes, and Community in 1940s Baltimore, and Lessons for Urban Ecology Today.* April 17, 2014.

Anne Speckhard (Georgetown Univ. Medical School) *Talking to Terrorists: Understanding the Psycho-Social Motivations of Militant Jihadi Terrorists.* April 11, 2014.

Giuseppe D'Aguanno (Aegis Technologies) *Extraordinary Optical and Acoustic Transmission in Metamaterials.* April 4, 2014.

Amb. Donald P. Gregg (Former Ambassador to the Republic of Korea) *Korea.* March 28, 2014.

Thomas H. Staal (U.S. Agency for International Development) *Syria: Origins of the Conflict.* March 21, 2014.

Ralph Langner (Langner Group) *Cyber-Physical Attack Engineering.* March 11, 2014.

Jon Gertner (Author) *Revisiting the Idea Factory: What Can Bell Labs Teach Us About Innovation and the Management of Ideas?* March 7, 2014.

Willie E. May (National Institute of Standards and Technology) *The National Institute of Standards and Technology (NIST): Its Impact on Innovation, Economic Security, and Quality of Life.* February 28, 2014.

David Robarge (Central Intelligence Agency) *Archangel: CIA's Supersonic a-12 Reconnaissance Aircraft.* February 21, 2014.

Willie Padilla (Boston College) *Electromagnetic Metamaterials.* January 23, 2014.

Stamatios M. Krimigis (JHU/APL) *Voyager's Odyssey: From Earth to the Galaxy in Thirty-Five Years.* January 17, 2014.

Jeff J. S. Black (St. John's College) *Privacy, Ancient and Modern.* January 8, 2014.

Alfredo Quiñones-Hinojosa (Johns Hopkins Medical Institutions) *Engines of Brain Cancer Migration.* December 11, 2013.

Jerry Buckley, Margo Tank, and Steve Bisbee (BuckleySandler LLC and eOriginal) *Electronic Signatures and Records: The Intersection of Law and Technology.* December 6, 2013.

Paul Rosenzweig (Professorial Lecturer in Law, George Washington Univ. School of Law) *Cyber Warfare: The Economics, Policy, and Law of Cyber Conflict.* November 22, 2013.

Thomas Hazlett (George Mason Univ.) *The POLITICAL SPECTRUM: Regulators, Interest Groups, and the Struggle to Liberate Wireless Technologies of Freedom.* November 13, 2013.

Eric W. Boyle (National Museum of Health and Medicine) *From Quackery to Complementary Medicine: A History of Combating Alleged Health Fraud Since the Early 20th Century.* November 1, 2013.

Col. Timothy P. Alben (Massachusetts State Police) *MANAGING RISK: The Boston Marathon and Changing Security for Large Public Gatherings.* October 11, 2013.

2012 – 2013

Ignition Grants Winners (JHU/APL) *Ignition Grants Spring 2013 Edition.* August 16, 2013.

LTG Michael D. Barbero (U.S. Army Ret.; Former Director, Joint IED Defeat Organization) *The Global and Enduring IED Challenge.* July 19, 2013.

Nergis Mavalvala (Massachusetts Inst. of Technology) *Beyond the Quantum Limit in Gravitational Wave Detectors.* June 28, 2013.

Nader Engheta (Univ. of Pennsylvania) *Of Waves, Electrons, and Metamaterials.* June 21, 2013.

Capt. Michael Weiner (U.S. Navy, DoD/Veterans Affairs Interagency Program Office) *DoD Electronic Health Records.* June 3, 2013.

B. B. Rath (Naval Research Laboratory) *Energy After Oil.* May 31, 2013.

2013 Hart Prize Winners (JHU/APL) *The Hart Prizes for Excellence in Independent Research and Development.* May 17, 2013.

Kevin Kallaugher (The Economist) *From Pen to Pixel: Political Cartoons and the Future of Satire.* May 10, 2013.

Edward G. Amoroso (AT&T) *Reinventing Enterprise Network Security.* May 3, 2013.

Vinton G. Cerf (Google) *Re-Inventing the Internet.* April 29, 2013.

Carey M. Lisse (JHU/APL) *Prospects for Life and Human Habitability Around Nearby Stars: Many Possible Homes for Our Elder (?) Race, but the Neighbors Are Likely Bacteria.* April 26, 2013.

Vincent W. S. Chan (Massachusetts Inst. of Technology) *Optical Flow Switching.* April 23, 2013.

George Lucas (Naval Postgraduate School) *Legal and Ethical Precepts Guiding Research and Use of Emerging Military Technologies.* April 19, 2013.

Stephanie Hill (Lockheed Martin) *Information Technology Systems and Services and STEM.* February 22, 2013.

Jason Heikenfeld (Univ. of Cincinnati Novel Devices Laboratory) *Fluidic Devices for Tomorrow's Defense Applications: Displays, Electronics, Biosensors, and More ….* February 15, 2013.

John Boice (National Council on Radiation Protection and Measurements) *NCRP and the Study of a Million U.S. Radiation Workers and Veterans.* February 8, 2013.

Ignition Grants Winners (JHU/APL) *Ignition Grants Cycle 5 Colloquium.* January 24, 2013.

Jason Landrum (National Oceanic and Atmospheric Administration) *Federal Action to Reduce the Impacts of Marine Debris: Responses to Pervasive Problems and Natural Disaster Events.* January 18, 2013.

2012 Hart Prize Winners (JHU/APL) *The Hart Prizes for Excellence in Independent Research and Development.* November 30, 2012.

Norman Friedman (Defense Analyst) *UAVs in Strike Warfare.* November 9, 2012.

Polly Nayak (Independent Consultant) *India: Decision Making on External Security Issues.* November 2, 2012.

Ramon E. Lopez (Univ. of Texas at Arlington) *The Science of Space Weather.* October 19, 2012.

2011 – 2012

Ignition Grants Winners (JHU/APL) *JHU/APL STEM Ignition Grants.* September 28, 2012.

Soner Cagaptay (The Washington Institute) *Turkey's Foreign Policy Pivot.* September 20, 2012.

Dan Sievenpiper (Univ. of California, San Diego) *Artificial Impedance Surfaces: Passive, Active, and Nonlinear Periodic Structures for Controlling Electromagnetic Surface Currents.* August 24, 2012.

John Nagl (Center for a New American Security) *Learning to Eat Soup With a Knife: Counterinsurgency Lessons From Iraq and Afghanistan.* June 15, 2012.

Steven Chu (Secretary of Energy, 1997 Nobel Prize for Physics) *America's Role in Meeting the Energy Challenge.* June 1, 2012.

Maj. Joe Thomas and Marc A. Kolodner (U.S. Army and JHU/APL) *Signatures Exploitation in the Transshipment Zone.* May 18, 2012.

Robert Cahalan (NASA Goddard Space Flight Center) *Solar Irradiance and Climate – What's New? What's Next?* May 11, 2012.

Ignition Grants Winners (JHU/APL) *Ignition Grants Cycle 3 Colloquium.* May 4, 2012.

Mark T. Maybury (U.S. Air Force Chief Scientist) *Cyber Vision 2025: Air Force Cyber S&T Vision.* April 11, 2012.

David W. Orr (Oberlin College) *Twenty-First Century Sustainability, Resilience, and National Security.* April 6, 2012.

Scott M. Tyson (Author) *Pardon Me, but Your Paradoxes Are Showing!* March 30, 2012.

Barbara Slavin (Atlantic Council) *What Should We Do About Iran?* March 16, 2012.

Michael E. O'Hanlon (Brookings Institution) *Bending History?* March 9, 2012.

Vanda Felbab-Brown (Brookings Institution) *The Crime-Militancy Nexus: A Witch's Brew or a Myth?* March 2, 2012.

Ayanna Howard (Georgia Institute of Technology) *SnoMotes: Robotic Scientific Explorers for Understanding Climate Change.* February 17, 2012.

Rengaswamy Srinivasan (JHU/APL) *Advanced Lithium Batteries: One Way to Use, Many Ways to Abuse.* February 3, 2012.

Adam Riess (JHU Dept. of Physics and Astronomy and the Space Telescope Science Institute, 2011 Nobel Prize for Physics) *Dark Energy and the Cosmic Expansion History.* January 27, 2012.

Randolph L. Sullivan (Nuclear Regulatory Commission) *Overview of the Fukushima Daiichi Accident.* January 20, 2012.

Russell H. Taylor (JHU Dept. of Computer Science) *Medical Robotics and Computer-Integrated Interventional Medicine.* January 13, 2012.

Richard Gilly (Patent Attorney) *Weathering the Storm: Patents in the Cloud.* January 6, 2012.

2011 Hart Prize Winners (JHU/APL) *The Hart Prizes for Excellence in Independent Research and Development.* December 9, 2011.

W. P. Andrew Lee (JHU School of Medicine) *Immune Modulation for Hand Transplantation.* December 2, 2011.

Kelly Brunt (NASA GESTAR – Morgan State Univ.) *Antarctic Ice-Shelf Calving Triggered by the Japanese Earthquake and Tsunami, March 2011.* November 18, 2011.

Ignition Grants Winners (JHU/APL) *Ignition Grants Cycle 2 Colloquium.* November 4, 2011.

John R. Schmidt (George Washington Univ.) *The Unraveling: Pakistan in the Age of Jihad.* October 28, 2011.

Isaac Gertman (Israel Oceanographic and Limnological Research) *Amazing Interannual Variability of the Dead Sea Hydrological Regime.* October 21, 2011.

VADM Walter B. Massenburg (U.S. Navy Ret.; President, Association of Naval Aviation and Raytheon Integrated Defense Systems) *Centennial of Naval Aviation … the Next 100 Years?* October 14, 2011.

2010 – 2011

Carolina Cruz-Neira (Univ. of Louisiana at Lafayette) *A Digital Wonderland: Virtual Reality Applications for Everybody.* September 30, 2011.

Ignition Grants Winners (JHU/APL) *Ignition Grants Cycle 1 Colloquium.* June 17, 2011.

LCDR Mike Touse (Naval Postgraduate School) *Design, Fabrication, and Characterization of a Micromechanical Directional Microphone.* June 10, 2011.

Larry Robinson (National Oceanic and Atmospheric Administration) *Role of NOAA After the BP Deepwater Horizon Oil Spill.* June 3, 2011.

Rama Chellappa (Univ. of Maryland) *Compressive Sensing for Computer Vision.* May 24, 2011.

David Harriman (Author) *Do Scientists Need Philosophy?* May 13, 2011.

David Alberts (Office of the Assistant Secretary of Defense (Networks and Information Integration) and DoD Chief Information Officer) *The Agility Imperative.* April 22, 2011.

Joe Rosen (George Washington Univ.) *Other Universes.* April 15, 2011.

Dennis McCarthy (U.S. Naval Observatory) *Evolution of Timekeeping.* April 8, 2011.

Peter Pronovost (Johns Hopkins Medical Institutions) *Safe Patients, Smart Hospitals.* April 1, 2011.

Norman Polmar (Analyst) *Project Azorian: The CIA and the Raising of the K-129.* March 25, 2011.

Ren Cahoon (Archivist) *Gaping Holes in Our History: A Story of Impetuous Innovation.* March 18, 2011.

David E. Hoffman (Journalist) *Two Sides of Mikhail Gorbachev at the End of the Cold War: Decisions on Strategic Defenses and Biological Weapons, 1985-1991.* March 11, 2011.

Marvin W. Barrash (Author) *U.S.S. Cyclops – Lost Without a Trace.* March 4, 2011.

Darryll J. Pines (Univ. of Maryland) *Emerging Non-GPS Navigation Technology for Aerospace Systems.* February 25, 2011.

Bob Buus (Former Bell Labs) *The Forefathers of Radio.* February 18, 2011.

Richard Danzig (Former Secretary of the Navy) *Bioterrorism: How Should We Assess the Risk, and How Should We Prepare for It?* February 11, 2011.

Charles L. Bennett (JHU Dept. of Physics and Astronomy) *Big Bang for the Buck: Cosmology From WMAP.* January 14, 2011.

LCDR Robert Kerchner and Nancy M. Haegel (Naval Postgraduate School) *Vehicle Mounted Identification Friend or Foe (VMIFF): Leveraging Existing Targeting Systems for Fratricide Mitigation.* January 7, 2011.

Kathryn Flanagan (Space Telescope Science Institute) *The James Webb Space Telescope: We Can See the Beginning.* December 10, 2010.

2010 Hart Prize Winners (JHU/APL) *The Hart Prizes for Excellence in Independent Research and Development.* December 3, 2010.

Virginia W. Lunsford (United States Naval Academy) *The War Against Piracy: The Golden Age and Now.* November 19, 2010.

Michael Greenberger (Univ. of Maryland) *Our Economic Insecurity and Its Relationship to the Overall Security of the Nation.* November 12, 2010.

Rob Randell (VMware) *Architecting and Building a Secure Virtual Infrastructure and Private Cloud.* November 5, 2010.

Peter Volkovitsky (National Institute of Standards and Technology) *History of the Soviet Nuclear Weapon Project.* October 29, 2010.

Jonathan Pevsner (Kennedy Krieger Institute) *The Mind of Leonardo Da Vinci.* October 15, 2010.

Marc A. Kolodner (JHU/APL) *APL Signatures Exploitation Program.* October 8, 2010.

2009 – 2010

Patricia P. Driscoll (Frontline Defense Systems) *The Art of the Possible.* September 23, 2010.

Christos Bolakis and Gamani Karunasiri (Naval Postgraduate School) *MEMS Based Sensors for THz Imaging.* June 3, 2010.

Naim Merheb (JHU/APL) *Doing APL Stuff in Baghdad.* May 26, 2010.

Peter J. McDonnell (JHU Wilmer Eye Institute) *The Wilmer Eye Institute and Health Care Reform.* May 21, 2010.

Michael Berman (Catbird) *Security, Protection, and Compliance for Virtual Infrastructure (And the Cloud) – Building Security Into the Fabric.* May 14, 2010.

Jin U. Kang (JHU Dept. of Electrical and Computer Engineering) *Photonics Applications: Past, Present, and Future.* May 7, 2010.

Deborah Elam (General Electric Company) *Leadership: Transforming Diversity Into Inclusion.* April 23, 2010.

Hrvoje Jasak (Univ. of Zagreb) *OpenFOAM: Object-Oriented Software in Computational Continuum Mechanics.* April 16, 2010.

Howard Cox (U.S. Department of Justice) *Cybercrime Trends 2010.* April 9, 2010.

Joel S. Wit (JHU School of Advanced International Studies) *Will North Korea Give Up Its Nuclear Weapons?* April 2, 2010.

Richard Howard (Verisign iDefense) *2010 Cyber Threats and Trends.* March 26, 2010.

Joshua Epstein (Brookings Institution) *Agent-Based Computational Modeling in Public Health: From Playground to Planet.* March 19, 2010.

Stephen C. Schimpff (Univ. of Maryland Medical Center) *The Future of Medicine – Megatrends in Medical Science and in Healthcare Delivery.* March 12, 2010.

Ronald Marcell (Immigration and Customs Enforcement) *Undercover Operations in Counter-Proliferation Investigations.* March 5, 2010.

Joseph S. Francisco (President, American Chemical Society) *Chemistry and Its Role in National Security and the STEM Challenge.* February 25, 2010.

Martin Murphy (Center for Strategic and Budgetary Assessments) *Somali Piracy: The Implications for International Security.* February 19, 2010.

RADM David Titley (Oceanographer and Navigator of the Navy) *The U.S. Navy's Task Force on Climate Change.* January 29, 2010.

Jeffrey S. Bardin (ITSolutions) *Extremist Jihadi Social Networks.* January 22, 2010.

Scott Pace (George Washington Univ.) *International Opportunities and Challenges for U.S. Space Policy.* December 11, 2009.

2009 Hart Prize Winners (JHU/APL) *The Hart Prizes for Excellence in Independent Research and Development.* December 1, 2009.

Roger D. Launius (National Air and Space Museum) *Perspectives on the Past, Present, and Future of Human Spaceflight.* November 20, 2009.

LTG James A. Abrahamson (U.S. Air Force Ret., former director of the Strategic Defense Initiative Organization) *The Strategic Defense Initiative, JHU/APL, and the Cold War.* November 13, 2009.

Brad Parkinson (Stanford Univ.) *The Origins of GPS and the Role of APL in the Technology.* October 27, 2009.

George F. Riley (Georgia Institute of Technology) *Network Simulation With NS3.* October 23, 2009.

Nirdhar Khazanie (Northrop Grumman) *Information Sharing Behind Firewalls.* October 16, 2009.

2008 – 2009

Capt. Mark B. Lyles (U.S. Navy Bureau of Medicine and Surgery) *Medical Geology: Dust Exposure and Potential Health Risks in the Middle East.* September 25, 2009.

RADM Jay A. DeLoach (U.S. Navy Ret., Naval History and Heritage Command) *Hispanic Americans in American Naval History.* September 18, 2009.

Joseph D'Aleo (Meteorologist) *Climate Change.* June 11, 2009.

Michael C. MacCracken (Climate Institute) *Climate Change – A Challenge We Must Address.* June 5, 2009.

Richard Talbott (JHU/APL) *Information Assurance Lessons From the Past, WWII, and Today.* May 29, 2009.

Martin P. Harmer (Lehigh Univ.) *Complexions: New States of Matter at Interfaces.* May 22, 2009.

Kal Shastri (Lightwire) *Journey of a Physicist in the Engineering World.* May 15, 2009.

Waleed Abdalati (Univ. of Colorado, Cooperative Institute for Research in Environmental Sciences) *Dramatic Changes in Polar Ice: Are We Waking Sleeping Giants?* May 8, 2009.

George Helfrich (JHU/APL Ret.) *APL and the U.S. Navy in the Deserts of New Mexico.* April 24, 2009.

Ned Tillman (Growth Adventures) *The Chesapeake Watershed – Past, Present, and Future.* April 17, 2009.

Charles Seife (New York Univ.) *Fusion, Politics, and the Press.* April 10, 2009.

Marcus Jones (U.S. Naval Academy) *U.S. Strategic Bombing in Doctrine and Practice in World War II: The Case of the European Theater.* April 3, 2009.

James C. M. Hwang (Lehigh Univ.) *RF MEMS Technology for Space Applications.* March 27, 2009.

Giles Dorronsoro (Carnegie Endowment for International Peace) *Focus and Exit: An Alternative Strategy for the Afghan War.* March 13, 2009.

Sudip Bose (Advocate Christ Medical Center) *On Call in Iraq.* March 6, 2009.

Reuben Pitts (NSWC Dahlgren Ret.) *The U.S.S. Vincennes Incident – The Data.* February 27, 2009.

Slava Rotkin (Lehigh Univ.) *Transistor Channels "Flying" a Few Nanometers Above the Surface: Novel Physics of "Empty" Space.* February 20, 2009.

Denise Gray (General Motors Engineering) *Reinventing GM and the Automobile: From Batteries to Sustainability.* February 13, 2009.

Erik van Ommeren (Sogeti U.S.A. LLC) *Me the Media: Rise of the Conversation Society.* February 6, 2009.

Steven Brams (New York Univ.) *Mathematics and Democracy: Designing Better Voting and Fair-Division Procedures.* January 30, 2009.

Tom Vanderbilt (Author) *Objects in Mirror Are More Complicated Than They Appear: Looking Into Traffic.* January 23, 2009.

Mario Livio (Space Telescope Science Institute) *Is God a Mathematician?* January 16, 2009.

John Adam (Old Dominion Univ.) *"Guesstimation:" Fermi Problems, Orders of Magnitude, and the Goldilocks Principle.* January 9, 2009.

Marcus Noland (Peterson Institute for International Economics) *Arab Economies: Recent Accomplishments and Long-Term Challenges.* December 12, 2008.

Shanker Singham (International Law) *A General Theory of Trade and Competition: Trade Liberalization and Competitive Markets.* December 5, 2008.

2008 Hart Prize Winners (JHU/APL) *The Hart Prizes for Excellence in Independent Research and Development.* November 21, 2008.

Col. David W. Lamm (U.S. Army Ret., National Defense Univ.) *Asymmetry and Change in Future Warfare.* November 14, 2008.

Shuja Nawaz (Strategic Analyst) *Crossed Swords: Pakistan, Its Army, and the Wars Within.* November 7, 2008.

Ellen Ochoa (Astronaut, NASA Johnson Space Center) *Hispanic Heritage Month Colloquium.* October 24, 2008.

Robin Wright (Journalist) *The Future of the Middle East.* October 17, 2008.

2007 – 2008

Anh N. Duong (Science Advisor, Office of the CNO, Pentagon) *Naval Explosives.* May 23, 2008.

Beth Laura O'Leary (New Mexico State Univ.) *Space Archeology and the Lunar Legacy: One Giant Leap for Historic Preservation.* May 16, 2008.

Kenneth Budka (Alcatel-Lucent Bell Labs) *Public Safety Wireless Broadband.* May 9, 2008.

Brandon Southall (National Oceanic and Atmospheric Administration) *Marine Mammals and Noise: Science Applications and Perspectives on a Contentious (And Misrepresented) Issue.* May 2, 2008.

Alan Brandt (JHU/APL) *Waves, Fish, and Submarines: Thirty Years of Hydrodynamics Research at APL.* April 25, 2008.

Peter Thomson (Author) *Sacred Sea: A Journey to Lake Baikal.* April 11, 2008.

Mattias Mountain (Space Telescope Science Institute) *The Hubble, the James Webb Space Telescope, and Looking to the Future: Space Science at a Cross Road?* April 4, 2008.

Steven Benner (Foundation for Applied Molecular Evolution) *Unconventional Forms of Life and Life Detection.* April 2, 2008.

Jo Anne B. Barnhart (Former Commissioner, Social Security Administration) *Challenges Facing Social Security.* March 14, 2008.

James Turner (National Institute of Standards and Technology) *African-American Technological Contributions: Past, Present, and Future.* February 20, 2008.

Col. Michael A. Shupp (U.S. Marine Corps, Legislative Assistant for the Chairman of the Joint Chiefs of Staff) *The Battle of Falluja.* February 15, 2008.

George Bibel (Univ. of North Dakota) *Beyond the Black Box: The Forensics of Airplane Crashes.* February 1, 2008.

Robert Strom (Univ. of Arizona) *Global Warming and the Human Condition.* January 18, 2008.

Sam Yee (JHU/APL) *Upper Atmosphere: Gateway Region for Solar-Terrestrial Interaction.* January 4, 2008.

Spencer Wells (National Geographic Society) *Deep Ancestry: Inside the Genographic Project.* December 14, 2007.

Sten Odenwald (NASA Goddard Space Flight Center) *The Superstorm of 1859: Learning From the Past to Anticipate Future Consequences.* December 7, 2007.

2007 Hart Prize Winners (JHU/APL) *The Hart Prizes for Excellence in Independent Research and Development.* November 30, 2007.

Bradley Layton (Drexel Univ.) *Bionanotechnology and Mechanoevolution.* November 16, 2007.

Sky Alibhai and Zoe Jewell (WildTrack) *WildTrack: A Synergy of Wild Beasts, Ancient Tracking Skills, and Modern Techniques for Footprint Identification.* November 7, 2007.

David Mindell (Massachusetts Inst. of Technology) *Digital Apollo: Human and Machine in Six Lunar Landings.* November 5, 2007.

Ernest A. Seglie (Office of the Secretary of Defense, Director of Operational Test and Evaluation) *The Costs of Unsuitability and Benefits of Building-in Reliability, Availability, and Maintainability.* October 26, 2007.

William B. Scott (Author) *Space Wars: The First Six Hours of World War III.* October 12, 2007.

Juan Maldacena (Institute for Advanced Study) *QCD, Strings, and Black Holes: A Duality Between Gravity and Field Theory.* October 5, 2007.

2006 – 2007

Andrew F. Cheng (JHU/APL) *A Tale of Two Asteroids, or Catastrophic Disruption Revisited.* September 28, 2007.

Gadi Evron (Security Evangelist, Beyond Security) *Estonia: Information Warfare and Strategic Lessons.* August 24, 2007.

Jeff Barr (Amazon Web Services) *Building a "Web-Scale Computing" Architecture.* June 6, 2007.

William Dunham (Muhlenberg College) *A Tribute to Euler.* June 1, 2007.

Aravinda Chakravarti (JHU School of Medicine) *Genes for Common, Chronic Diseases.* May 18, 2007.

MG David P. Fridovich (U.S. Army, USSOCPAC) *War on Terror in Asia, "Basilan Model" and Indirect Approach.* May 16, 2007.

S. Fred Singer (Science and Environmental Policy Project) *Origin of the Moon.* May 4, 2007.

Greg Jackson (Univ. of Maryland, College Park) *Solid Oxide Fuel Cells: Challenges for Applications Beyond Hydrogen.* April 27, 2007.

Alan Moloff (Consultant) *Special Operations and Disaster Medicine. Common Challenges! Common Solutions?* April 4, 2007.

James G. Rickards (Global-I Advisors, LLC) *Theory and Practice of the New Science of Market Intelligence.* March 23, 2007.

Zee Duron (Harvey Mudd College) *Field Procedures for Tracking Stability in Burning Buildings.* March 16, 2007.

Dwayne Meadows (National Oceanic and Atmospheric Administration) *Riding the World's Biggest Wave: Preparedness and Recovery Lessons From the 2004 Indian Ocean Tsunami in Thailand.* March 2, 2007.

Ronald Kelly (Federal Bureau of Investigation) *Forensic Aspects of Explosion/Bombing Investigations.* February 23, 2007.

Isaiah Blankson (NASA Glenn Research Center) *Aeronautical Research Activities in Hypersonics at the NASA Glenn Research Center.* February 16, 2007.

Bruce Campbell (Smithsonian Institution) *What Lies Beneath? Using Radar to Look Below the Surface of the Moon and Mars.* February 9, 2007.

David Jacobson (National Institute of Standards and Technology) *Using Neutron Radiography to Study Hydrogen Fuel Cells.* February 2, 2007.

James Bamford (Author) *NSA: A History of Domestic Eavesdropping.* January 19, 2007.

R. Alan King (Author) *Iraq: The Past, the Present, and the Way Ahead.* January 12, 2007.

Barry Geldzahler (NASA) *Next Generation Deep Space Network: Vision for the Next 100 Years.* January 5, 2007.

2006 Hart Prize Winners (JHU/APL) *The Hart Prizes for Excellence in Independent Research and Development.* December 15, 2006.

John R. Benedict Jr. (JHU/APL) *Taking a Long-Term Perspective on U.S. Navy ASW Objectives, Capabilities, and Trends (Historical Survey and Projections, 1940-2020).* December 8, 2006.

Robert W. Farquhar and Joseph Veverka (JHU/APL and Cornell Univ.) *The Next Steps in Human Space Exploration: What Are the Alternatives?* December 1, 2006.

Michael Vlahos (JHU/APL) *Productive Deterrence: Preserving America at Modernity's End.* November 16, 2006.

Michael Krieger (Office of the DoD Chief Information Officer) *Transforming the Way DoD Shares Information.* November 3, 2006.

Robb Wilcox (JHU/APL) *The Chief of Naval Operations Strategic Studies Group – Science Advisor's Perspective.* October 20, 2006.

Anna Escobedo Cabral (U.S. Treasurer) *Hispanic Heritage Month Colloquium.* October 11, 2006.

2005 – 2006

Christopher Coker (London School of Economics) *Ethics of the Long War.* May 24, 2006.

RADM William J. McDaniel (U.S. Navy Ret.) *Faces of the Tsunami.* May 19, 2006.

Nathaniel Fick (Former Captain, U.S. Marine Corps) *The Wars in Afghanistan and Iraq: A Junior Officer's Perspective on What We've Learned and Where We're Going.* May 12, 2006.

Barry Rubin (Global Research in International Affairs Center) *The Arab Struggle for Democracy in the Middle East.* May 5, 2006.

Col. Geoffrey Ling (U.S. Army, Defense Advanced Research Projects Agency) *Revolutionizing Prosthetics.* April 26, 2006.

Kim Weaver (NASA Goddard Space Flight Center) *New Eyes on the Universe: Observing Beyond Hubble With NASA's Other Space Telescopes.* April 21, 2006.

David F. Dinges (Univ. of Pennsylvania) *Sleep, Fatigue, and Stress: Monitoring Human Behavioral Capability.* April 12, 2006.

Harold Schmitz (Chief Scientist, Mars Inc.) *The Science of Cocoa and Chocolate: What Do Migratory Birds and Nitric Oxide Synthesis Have in Common?* March 31, 2006.

BG Victor N. Corpus (Armed Forces of the Philippines, Ret.) *The Assassin's Mace: A Worst Case Scenario for the New American Century.* March 24, 2006.

Michael A. Roberto (New York Univ. Stern School of Business) *Why Great Leaders Don't Take Yes for an Answer: Managing for Conflict and Consensus.* March 17, 2006.

Ted G. Kamatchus (Sheriff, Marshall County, Iowa) *A Sheriff's View of Homeland Security.* March 10, 2006.

Woodrow Whitlow Jr. (Director, NASA Glenn Research Center) *Breakthrough Technologies That Enable Space Exploration.* February 17, 2006.

Frank Doyle (Univ. of California, Santa Barbara) *A Systems Approach to Modeling and Analyzing Biological Systems.* February 3, 2006.

Paul Spudis (JHU/APL) *Robot Precursor Missions for a Human Return to the Moon.* January 27, 2006.

Ron Beard (Naval Research Laboratory) *The Future of the UTC Time Scale.* January 20, 2006.

Theodor Krauthammer (Pennsylvania State Univ.) *R&D Needs for Effective Blast, Shock, and Impact Mitigation.* January 13, 2006.

Mark Lewis (U.S. Air Force Chief Scientist) *Speed as a Critical Issue for the U.S. Air Force.* January 6, 2006.

Bruce A. Dale (National Geographic Society) *A Lifetime of BAD Photographs.* December 16, 2005.

Charles Nicholas (Univ. of Maryland, Baltimore County) *Who Wrote This Document?* December 9, 2005.

Steven M. Anlage (Univ. of Maryland, College Park) *Physics and Applications of Negatively-Refracting Electromagnetic Materials.* December 2, 2005.

Carey M. Lisse (JHU/APL and Univ. of Maryland) *Deep Impact and Comet 9P/Tempel 1: From Evolved Surface to Interior Primeval Dust.* November 18, 2005.

Thomas P. M. Barnett (Author and Strategic Planner) *Warfighting in the Twenty-First Century.* November 2, 2005.

Amb. Husain Haqqani (Carnegie Endowment for International Peace) *Pakistan: Between Mosque, Military, and Nuclear Weapons.* October 28, 2005.

Kay Jamison (JHU School of Medicine) *Scientific Exuberance.* October 21, 2005.

Tom Voltaggio (U.S. Environmental Protection Agency) *Responding to Weapons of Mass Destruction Incidents and Natural Disasters.* October 14, 2005.

John C. Sommerer (JHU/APL) *Science and Technology: Why Should We Care?* October 7, 2005.

2004 – 2005

VADM Richard H. Carmona (U.S. Surgeon General) *Hispanic Heritage Month Lecture.* September 30, 2005.

Louise Richardson (Radcliffe Institute for Advanced Study) *Democracy and Counterterrorism: Lessons From the Past.* May 26, 2005.

Norman Polmar (Analyst, Consultant, and Author) *Surprise! U.S. And Western Intelligence and Warning Failures During the Cold War.* May 13, 2005.

Steven Bellovin (Columbia Univ.) *Permissive Action Links and the History of Public Key Cryptography.* May 6, 2005.

Raymond W. Baker (Trinity College) *The Future of Islam: Egypt and the New Islamists.* April 29, 2005.

BG Duane W. Deal (U.S. Air Force) *Beyond the Widget: Columbia Accident Lessons Affirmed.* April 15, 2005.

Robert E. Gold (JHU/APL) *Defending the Earth From Asteroid Impacts.* April 8, 2005.

Ashley Tellis (Carnegie Endowment for International Peace) *U.S.-India Strategic Relations.* April 1, 2005.

Francis M. Deng (JHU School of Advanced International Studies) *A Clash of Identities: Darfur's Crisis in the National Context.* March 18, 2005.

Colin S. Gray (Univ. of Reading, England) *What Do We Know About Future Warfare?* March 16, 2005.

James P. Blair (National Geographic Society) *Where God Lives.* March 11, 2005.

Stephen Flynn (Council on Foreign Relations) *America the Vulnerable: Can the Homeland Be Secured?* March 9, 2005.

John Slaughter (National Action Council for Minorities in Engineering) *Black History: A Time for a New Chapter in Science and Technology.* February 18, 2005.

Vincent Vitto (Charles Stark Draper Laboratory) *The Naval Studies Board and Its Views on Naval Issues.* February 16, 2005.

Hans M. Mark (Univ. of Texas, Austin) *Naval Applications of Electro-Magnetic Guns.* February 11, 2005.

Col. Thomas X. Hammes (U.S. Marine Corps and National Defense Univ.) *The Sling and the Stone: On War in the 21st Century.* February 7, 2005.

Gal Luft (Inst. for the Analysis of Global Security) *Terrorism on the High Seas.* January 28, 2005.

Michael Scheuer (Former Central Intelligence Agency) *They Still Don't Get It: The Danger of Ignoring Reality in the War on Terrorism.* January 20, 2005.

David J. Nagel (George Washington Univ.) *Low-Energy Nuclear Reactions: Problems, Progress, and Prospects.* December 17, 2004.

John M. Carroll (Pennsylvania State Univ.) *Scenarios and Design Cognition.* December 10, 2004.

Stamatios M. Krimigis (JHU/APL) *Cassini at Saturn: Wonders of the Giant Planet Revisited.* December 3, 2004.

Jill Tarter (SETI Inst.) *Search for Extraterrestrial Intelligence: Pulling Signals Out of Cosmic Noise.* November 19, 2004.

Douglas Farah (Author and Journalist) *Diamonds, Weapons, and Passports: The Strategic Challenge of Failed States to U.S. National Security.* November 12, 2004.

Peter Heller (International Monetary Fund) *Confronting Long-Term Fiscal Challenges.* October 29, 2004.

Michael Vlahos (JHU/APL) *The War at Midpassage: Where Do We Go From Here?* October 15, 2004.

John Stenbit (Former CIO and Assistant Secretary of Defense for C3I) *Why Net-Centric?* October 4, 2004.

2003 – 2004

Orlando Figueroa (NASA Headquarters Science Mission Directorate) *Science and the Vision for Space Exploration.* September 17, 2004.

Griff Corpening (NASA Dryden Flight Research Center) *X-43A: The First Flight of a Scramjet Powered Airplane.* July 15, 2004.

Col. James B. Hickey (U.S. Army) *The Capture of Saddam Hussein.* June 25, 2004.

CDR Johnny R. Wolfe Jr. (U.S. Navy) *The Shuttle Columbia Accident Investigation – A Member's Perspective.* May 24, 2004.

David Dunham (JHU/APL) *Exploring the Cosmos by "Doing Something Different."* May 14, 2004.

Norman Friedman (Defense Analyst) *Where Is the Navy Likely to Go?* May 7, 2004.

Dava Sobel (Author) *Galileo in the Applied Physics Laboratory.* April 30, 2004.

James Oberg (Author) *China's Great Leap Upward – How Realistic Are Its Space Ambitions?* April 23, 2004.

John T. Emmert (George Mason Univ. and Naval Research Laboratory) *Climate Change at the Edge of the Atmosphere: Evidence of Long-Term Thinning.* April 16, 2004.

MG Robert H. Scales Jr. (U.S. Army Ret., Independent Consultant) *Lessons Learned From the Iraq War.* April 2, 2004.

Maynard L. Hill (JHU/APL Ret.) *Transatlantic Radio Controlled Model Flight.* March 26, 2004.

Avi Rubin (Johns Hopkins Univ.) *Security Issues in Electronic Voting.* March 19, 2004.

Wayne Merry (American Foreign Policy Council) *The Future of Transatlantic Relations: Thinking Beyond NATO.* March 5, 2004.

Richard Restak (Neurology Associates) *The New Brain: The Role of Technology in Changing Our Concepts About Neuroscience.* February 27, 2004.

Sunil Khilnani (JHU School of Advanced International Studies) *South Asia on the Edge.* February 20, 2004.

Ellis Barksdale (Barksdale Solutions) *E3 = Egypt, Engineering, and Education.* February 6, 2004.

Srinidhi Varadarajan (Virginia Tech) *System X: Building the Virginia Tech Supercomputer.* January 30, 2004.

MG Robert F. Behler (U.S. Air Force Ret., JHU/APL) *Enforcing U.S. Foreign Policy From the Edge of Space.* January 23, 2004.

Sheldon Jacobson (Univ. of Illinois Urbana-Champaign) *Understanding Aviation Security Issues Using Operations Research Models and Analysis.* January 16, 2004.

VADM Arthur K. Cebrowski (U.S. Navy Ret.; Director, Force Transformation, Office of the Secretary of Defense) *Force Transformation.* January 9, 2004.

ADM Dennis C. Blair (U.S. Navy Ret.; President, Inst. for Defense Analyses) *Future Strategic Strike Forces.* December 19, 2003.

Phillip Longman (New America Foundation) *The Geo-Politics of Global Aging: Fertility Decline and the Fate of Nations.* November 21, 2003.

Bradley C. Edwards (Inst. for Scientific Research) *The Space Elevator.* November 14, 2003.

James D. Franson (JHU/APL) *Quantum Computing Using Linear Optics.* October 24, 2003.

Antulio J. Echevarria II (U.S. Army War College) *Globalization and the Nature of War.* October 17, 2003.

2002 – 2003

Knox Andress (Christus Schumpert Health System) *Hospital Emergency Management for Weapons of Mass Destruction: An Overview.* September 19, 2003.

George Friedman (Strategic Forecasting, Inc.) *The Iraq Campaign: An Episode in a War.* September 5, 2003.

Sheldon Greenberg (JHU Division of Public Safety Leadership) *The Hidden Facts About First Responder Readiness.* May 16, 2003.

William Farrell (NASA Goddard Space Flight Center) *The Electro-Meteorology of Dust Devils.* May 9, 2003.

Angela Stent (Georgetown Univ.) *U.S.-Russian Relations After the Iraq War.* May 2, 2003.

Edward MacKerrow (Los Alamos National Laboratory) *Threat Anticipation Program: Agent-Based Simulation of Factors Motivating Terrorism.* May 1, 2003.

Victor Utgoff (Inst. for Defense Analyses) *Running for Sheriff.* April 25, 2003.

Alan Rudolph (Defense Advanced Research Projects Agency) *Harvesting Biology for Defense Technology.* April 11, 2003.

Jason Ellis (National Defense Univ.) *The Best Defense: Counterproliferation and U.S. National Security.* April 4, 2003.

Guy M. McKhann and Marilyn S. Albert (JHU School of Medicine) *Keeping Your Brain Young.* March 28, 2003.

Gerald M. Stokes (Univ. of Maryland and Pacific Northwest National Laboratory) *Two Grand Challenges of Climate Research.* March 21, 2003.

Peter F. Verga (Defense Advisor to the Secretary of Homeland Security) *The Department of Defense Role in Homeland Security.* March 7, 2003.

Ruth Wedgwood (JHU School of Advanced International Studies) *Preemptive Self-Defense and the U.N. Charter.* February 25, 2003.

Anthony D. King (Ventana Medical Systems, Inc.) *Global Connectivity: Leveraging Remote Access Technology.* February 21, 2003.

Tim Miller (JHU/APL) *High-Energy Neutrino Astronomy at the South Pole.* February 7, 2003.

Stephen D. Biddle (U.S. Army War College Strategic Studies Institute) *Afghanistan and the Future of Warfare: Implications for Army and Defense Policy.* January 31, 2003.

Thomas Ferguson (U.S. Dept. of the Treasury, Bureau of Engraving and Printing) *Protecting U.S. Currency: Design and Counterfeit Deterrence.* January 24, 2003.

George Ayittey (American Univ.) *West Africa: Its Strategic Importance.* January 17, 2003.

Victor Yakovenko (Univ. of Maryland) *Statistical Mechanics of Money, Income, and Wealth.* January 10, 2003.

Stuart Gilman (The Ethics Resource Center) *Ethics in Science, Engineering, and Organizations.* December 13, 2002.

Samuel C. Colbeck (U.S. Army Cold Regions Research and Engineering Laboratory) *The Physics of Snow and Skiing: What Is Snow Anyway?* December 6, 2002.

Richard D. Fisher Jr. (The Jamestown Foundation) *China's Military Modernization.* November 22, 2002.

Robert Ehrlich (George Mason Univ.) *Crazy Ideas in Science.* November 15, 2002.

Benjamin F. Chao (NASA Goddard Space Flight Center) *Time-Variable Gravity From Space: A Quarter Century of Observations, Mysteries, and Prospects.* November 8, 2002.

Vicki Freimuth (Centers for Disease Control) *The Anthrax Attacks and CDC's Communication Response.* October 25, 2002.

Edward Liszka (Pennsylvania State Univ. Applied Research Laboratory) *Applied Research Laboratory at Pennsylvania State University: An Overview.* October 18, 2002.

Robert E. Fischell (Fischell Biomedical, LLC) *Coated Stents: A Major Breakthrough in the Treatment of Heart Disease.* October 11, 2002.

Robert Fry (JHU/APL) *The Engineering of Cybernetic Systems: From Neurons to Ballistic Missile Defense.* October 4, 2002.

2001 – 2002

Richard Haver (Office of the Secretary of Defense) *Technology and the Needs of the Intelligence Community.* June 17, 2002.

John Gearhart (JHU School of Medicine) *Stem Cell Research.* May 17, 2002.

Jeng-Hwa Yee and David Kusnierkiewicz (JHU/APL) *The TIMED Spacecraft: Science and Technology.* May 10, 2002.

David Kestenbaum (National Public Radio) *My Father Sees Muons in the Driveway, or How to Explain Physics to Everybody Else.* May 3, 2002.

R. James Woolsey (Shea and Gardner) *Possible U.S. Responses to Terrorism.* April 26, 2002.

Lester M. Salamon (JHU Institute for Policy Studies) *Global Civil Society: Dimensions of the Nonprofit Sector.* April 19, 2002.

Michael E. O'Hanlon (Brookings Institution) *Military Transformation and Defense Policy Choices.* April 12, 2002.

Mario Livio (Space Telescope Science Inst.) *Beauty and the Accelerating Universe.* April 5, 2002.

John N. Moore (Univ. of Virginia) *Law of the Sea Treaty.* March 22, 2002.

James F. Jarboe (FBI Headquarters) *Counterterrorism.* March 15, 2002.

Gail Richter-Nelson (JHU Milton S. Eisenhower Library) *Center for Educational Resources at Homewood.* March 8, 2002.

Millard S. Firebaugh (General Dynamics Electric Boat Div.) *Submarine Design and Construction.* March 1, 2002.

Calvin Mackie (Tulane Univ.) *African Americans and Technology: A Harbinger of the Future.* February 22, 2002.

R. Keith Raney (JHU/APL) *From Geosat Into the ABYSS: Ocean Radar Altimetry at APL.* February 15, 2002.

John Langford (Aurora Flight Sciences Corp.) *Advanced UAVs for Science, Defense, and Applications.* February 8, 2002.

Bradley Roberts (Inst. for Defense Analyses) *Bioterrorism.* February 1, 2002.

David Zubrow (Carnegie-Mellon Univ.) *Putting "M" in the Model: Measurement and Capability Maturity Model Integration.* January 25, 2002.

Scot C. Kuo (JHU Dept. of Biomedical Engineering) *Nano-Tracking: Cell Mechanics Without Pulling or Prodding.* January 18, 2002.

Roger R. Schell (Aesec Corp.) *Computer Security.* January 11, 2002.

S. Frederick Starr (JHU School of Advanced International Studies) *Central Asia: Post-War Afghanistan and Its Region.* December 19, 2001.

Donald Duncan (JHU/APL) *RDT&E in Navy Programs: Optics in the Air Defense Systems Department.* December 14, 2001.

Norman Owsley (Office of Naval Research) *On Environmental Limits to Sonar Performance.* December 7, 2001.

Marius Deeb (JHU School of Advanced International Studies) *Why Bin Laden?* November 29, 2001.

Melissa McGrath (Space Telescope Science Inst.) *Jupiter's Galilean Satellites.* November 16, 2001.

Walter Dyer (Ballistic Missile Defense Org.) *Advanced Electro-Optic Technologies for Ballistic Missile Defense.* November 9, 2001.

Michael Vlahos (JHU/APL) *Upcoming Upheavals: Understanding Today's Threat.* November 5, 2001.

Michael O. Wheeler (Science Applications International Corp.) *Changing Directions in U.S. Defense Policy.* November 2, 2001.

David W. Jourdan (Nauticos Corp.) *The Discovery and Salvage of the Israeli Submarine INS DAKAR.* October 26, 2001.

Bruce Hoffman (The Rand Corp.) *Change and Continuity in Terrorism.* October 19, 2001.

Christopher J. Lobb (Univ. of Maryland) *Smaller, Faster, Cheaper: From Transistors to Artificial Microstructures.* October 12, 2001.

Paul J. Waltrup (JHU/APL) *Hypersonic Air-Breathing Propulsion: Future Flight Vehicles.* October 5, 2001.

2000 – 2001

William A. Wulf (President, National Academy of Engineering) *Technology Societal Issues.* July 18, 2001.

Joseph S. Peri (JHU/APL) *Data Fusion and Target ID: Dempster-Shafer and Probability Theories Holy War.* May 18, 2001.

Terry Collins (Carnegie-Mellon Univ.) *Green Chemistry.* May 11, 2001.

Dennis McBride (Univ. of Central Florida) *Simulation and Training.* May 4, 2001.

Raman Sundrum (JHU Dept. of Physics and Astronomy) *Extra Dimensions and Weakness of Gravity.* April 27, 2001.

Kenna Peusner (George Washington Univ. School of Medicine) *A Promising Model to Investigate Brain Plasticity.* April 20, 2001.

James Allen (Sandia National Laboratory) *Intelligent Micromachine Initiative and MEMS Fabrication Technologies.* April 6, 2001.

Andrew F. Cheng (JHU/APL) *NEAR at Eros.* March 30, 2001.

Louise Shelley (American Univ.) *Transnational Crime and Corruption.* March 23, 2001.

Anne Kinney (NASA Headquarters) *From Red Dropouts to Pale Blue Dots: The Science of the Origins Theme.* March 16, 2001.

Peter Loscocco (National Security Agency) *Security-Enhanced Linux.* March 9, 2001.

Tee L. Guidotti (George Washington Univ.) *Bioterrorism.* March 2, 2001.

Aprille Ericsson-Jackson (NASA Goddard Space Flight Center) *Microwave Anisotropy Probe: Stability, Design, and Analysis.* February 23, 2001.

Robert W. Flower (Univ. of Maryland) *Medical Applications of One APL Technology: Coming Full Circle.* February 16, 2001.

ADM Stansfield Turner (U.S. Navy Ret.; former Director, CIA) *The Dilemma of Nuclear Weapons in the 21st Century.* February 9, 2001.

Chia-Ling Chien (JHU Dept. of Physics and Astronomy) *Heterostructures and Spintronics.* February 2, 2001.

Gregory Hager (JHU Center for Computer Integrated Surgical Systems and Technology) *Software Systems for Vision-Based Interaction and Control.* January 26, 2001.

Athena Andreadis (Univ. of Massachusetts Medical School) *Human Settlement of Other Planets.* January 19, 2001.

Alexander Szalay (JHU Dept. of Physics and Astronomy) *The Cosmic Genome Project: The Sloan Digital Sky Survey.* January 5, 2001.

Sayeed Choudhury (JHU Milton S. Eisenhower Library) *The Digital Knowledge Center.* December 15, 2000.

James Hahn (George Washington Univ.) *The Virtual World of the Computer.* December 8, 2000.

William Harris (Critical Information Assessment Office) *Improving Surface Transportation Security.* December 1, 2000.

Capt. David M. Schubert (U.S. Navy, Office of Naval Research) *Naval Science and Technology Initiatives.* November 17, 2000.

Virginia L. Trimble (Univ. of Maryland, College Park) *Astrophysics Faces the Millennium.* November 10, 2000.

Richard J. Foch (Naval Research Laboratory) *Unmanned Autonomous Vehicles.* November 3, 2000.

Stephen G. Brush (Univ. of Maryland, College Park) *Why Was Relativity Accepted?* October 27, 2000.

Donald G. Mitchell (JHU/APL) *Images of the Magnetosphere.* October 20, 2000.

Daniel S. Goldin (Director, NASA) *NASA in the 21st Century.* October 10, 2000.

1999 – 2000

Robert Skinner Jr. (Transportation Research Board) *Transportation in the 21st Century.* June 9, 2000.

James Mayfield (JHU/APL) *Intelligent Web Searching.* June 2, 2000.

Claude R. Canizares (Massachusetts Inst. of Technology) *First Results From the Chandra X-Ray Observatory.* May 19, 2000.

James W. Head (Brown Univ.) *Water on Mars: Recent Results on Oceans and Polar Deposits.* May 12, 2000.

Frank L. Fernandez (Director, Defense Advanced Research Projects Agency) *DARPA in the 21st Century.* April 28, 2000.

Shirley Ann Jackson (President, Rensselaer Polytechnic Institute) *Science and Engineering Education of Women in the 21st Century.* April 14, 2000.

RADM Rodney P. Rempt and RADM Michael G. Mullen (U.S. Navy) *U.S. Navy in the 21st Century.* April 7, 2000.

C. Lee Giles (NEC Research Institute) *Searching the Web: It Is Worse Than You Thought.* March 31, 2000.

John D. Anderson (National Air and Space Museum) *Breaking the Sound Barrier.* March 17, 2000.

Gregory Chaitin (IBM T. J. Watson Research Center) *A Century of Controversy Over the Foundations of Mathematics.* March 10, 2000.

Michael I. Miller (JHU Center for Imaging Science) *Deformable Templates and Image Understanding.* March 3, 2000.

Frank E. McGarry (Computer Sciences Corp.) *Attaining Level 5 in the Capability Maturity Model.* February 25, 2000.

Richard T. Roca (Director, JHU/APL) *A Telecommunications Architecture for the 21st Century.* February 18, 2000.

Ronald Demon (VectraSense Technologies, Inc.) *Footwear Technology on the Cutting Edge: Computerized Footwear.* February 11, 2000.

Michael Zolensky (NASA Johnson Space Center) *Extraterrestrial Water.* February 4, 2000.

Ralph Chapman (Smithsonian Institution) *The Virtual Triceratops: Creating the First Digital Dinosaur.* January 28, 2000.

Eberhardt Rechtin (Univ. of Southern California, Ret.) *Systems Architecting of Organizations.* January 21, 2000.

William R. Brody (President, Johns Hopkins Univ.) *The Quantum Physics Model of the University in the New Millennium.* January 14, 2000.

Marc G. Millis (NASA) *Breakthrough Propulsion Physics Research Program.* January 7, 2000.

Isaac N. Bankman (JHU/APL) *Laser Radar in Ballistic Missile Defense.* December 17, 1999.

Thomas H. Guderjan (St. Mary's Univ.) *Blue Creek: An Ancient Maya City.* December 10, 1999.

Mario Acuña (NASA) *Mars Global Surveyor.* December 3, 1999.

Russell Howard (Naval Research Laboratory) *Space Weather.* November 19, 1999.

David E. Moncton (Argonne National Laboratory) *Advanced Photon Source.* November 12, 1999.

John J. Quinn (Univ. of Tennessee) *The Fractional Quantum Hall Effect.* November 5, 1999.

Douglas B. Lenat (Cycorp) *Computers With Common Sense: The CYC Project.* October 29, 1999.

Steven Salzberg (Inst. for Genomic Research) *Annotating Whole Genomes.* October 22, 1999.

Roy Frieden (Univ. of Arizona) *Physics From Fisher Information.* October 15, 1999.

Robert A. Eisenstein (National Science Foundation) *The Future of the Physical Sciences: A View From Washington.* October 8, 1999.

Joseph J. Suter (JHU/APL) *Innovative Battery Technologies.* October 1, 1999.

1998 – 1999

Scott L. Murchie (JHU/APL) *Mars: A Perspective From the Pathfinder.* May 21, 1999.

Alan G. Robinson (Univ. of Massachusetts) *Corporate Creativity: World-Class Idea Systems.* May 19, 1999.

James A. Simmons (Brown Univ.) *Signal Processing for Target Imaging.* May 14, 1999.

John W. Melvin (Tandelta, Inc.) *Improving Vehicle Safety.* May 7, 1999.

Steven L. Rolston (National Inst. of Standards and Technology) *Optical Lattices: A New Solid State?* April 30, 1999.

Samuel L. Venneri (NASA) *Intelligent Synthesis Environment.* April 23, 1999.

Peter Schultz (Brown Univ.) *Killer Impacts: Effect of Impact Angle.* April 16, 1999.

Ilene J. Busch-Vishniac (JHU Whiting School of Engineering) *Design of Highway Noise Barriers.* April 9, 1999.

Nitish Thakor (JHU Dept. of Biomedical Engineering) *Neuroengineering.* March 26, 1999.

Robert L. Wolke (Univ. of Pittsburgh) *Kitchen Chemistry and Physics.* March 19, 1999.

Forrest Tobey (JHU Peabody Inst.) *The 21st Century Musical Ensemble.* March 12, 1999.

Arthur Bienenstock (White House Office of Science and Technology Policy) *National Science Policy.* March 5, 1999.

Corey Gay (Inst. for Science and International Security) *Verification of the Comprehensive Test Ban Treaty.* February 26, 1999.

Anthony Kossiakoff (Univ. of Chicago) *The Role of Molecular Adaptation in Cellular Communication.* February 19, 1999.

Miquel Antoine (JHU/APL) *Mass Spectrometry and Human Spaceflight.* February 12, 1999.

Hon. Hans M. Mark (Director, Defense Research and Engineering) *Ice on the Moon.* February 5, 1999.

Ellen D. Williams (Univ. of Maryland) *Fluctuations in Materials Science.* January 22, 1999.

Stephanie L. Reel (JHU School of Medicine) *The Future of Healthcare.* January 15, 1999.

William I. Gasarch (Univ. of Maryland) *The Complexity of Problems.* January 8, 1999.

Dennis M. Bushnell (NASA Langley Research Center) *Future Strategic Issues 2020-2030.* December 18, 1998.

Robert S. Winokur (National Oceanic and Atmospheric Administration) *Environmental Satellite Information Systems: The Future Is Now.* December 11, 1998.

Robert C. Pfahl Jr. (Motorola Advanced Technology Center) *Future Changes in Electronics.* December 4, 1998.

Al Christman (Former Historian of the U.S. Navy) *Deak Parsons: The Proximity Fuze and the Atomic Bomb.* November 20, 1998.

Claire Ferguson and Helaman Ferguson (Author and Inst. for Defense Analysis) *Mathematics in Bronze and Stone.* November 13, 1998.

Gregory W. Sullivan (Univ. of Maryland) *The Search for Neutrino Mass at Super-Kamiokande.* November 6, 1998.

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Michael F. Shlesinger (Office of Naval Research) *Protein/Receptor Matching.* October 23, 1998.

Peter C. van Zijl (JHU School of Medicine) *MRI Methods for Studying Brain Functions.* October 16, 1998.

Denis J. Donohue (JHU/APL) *Radar Propagation and Scattering From Ocean and Terrain.* October 9, 1998.

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1997 – 1998

Marty R. Hall (JHU/APL) *The JAVA Revolution.* May 15, 1998.

James E. West (Bell Laboratories) *Auralization of Complex Environments.* May 8, 1998.

Alan A. Halpern (Michigan State Univ. School of Medicine) *Magnetically Directed Chondrogenesis.* May 1, 1998.

Bernhard Keiser (Keiser Engineering, Inc.) *Digital Cellular and Personal Radio Systems.* April 24, 1998.

Paul Smolensky (JHU Dept. of Cognitive Sciences) *Optimization in Language.* April 17, 1998.

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Raul Fainchtein (JHU/APL) *Think Small to Improve MRI.* December 5, 1997.

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Stephen D. Senturia (Massachusetts Inst. of Technology) *MEMS: Past Successes and Future Challenges.* November 7, 1997.

Robert E. Kanigel (Author) *The Enigma of Efficiency.* October 31, 1997.

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Dava Sobel (Author) *Longitude.* March 21, 1997.

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Paul Richards (Columbia Univ. Lamont-Doherty Earth Observatory) *The Rotation of Earth's Inner Core.* January 24, 1997.

Gilbert B. Chapman II (Chrysler Corp.) *Nondestructive Evaluation of Automotive Materials.* January 17, 1997.

Frederick Jelinek (JHU Dept. of Computer Engineering) *Speech-Related Research in the United States.* January 10, 1997.

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Michael Unser (National Institutes of Health) *Fast Algorithms for Wavelet Transforms.* March 15, 1996.

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Robert J. Cotter (JHU Dept. of Pharmacology and Molecular Science) *Smart Molecular Detectors for Biological Research.* March 1, 1996.

Donald A. Henderson (JHU School of Public Health and Hygiene) *New and Emerging Infections.* February 23, 1996.

Daniel E. Prober (Yale Univ.) *Hot-Electron Physics and Detectors in Superconductors.* February 16, 1996.

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Ludwig Brand (JHU Dept. of Biology) *Macromolecular Confirmations by Picosecond Spectroscopy.* January 19, 1996.

Joel E. Cohen (Rockefeller Univ.) *Population Growth and Earth's Human Carrying Capacity.* January 5, 1996.

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Rama Chellappa (Univ. of Maryland, College Park) *Context-Based Exploitation of Aerial Images.* December 8, 1995.

Stuart L. Pimm (Univ. of Tennessee) *The Future of Biodiversity.* December 1, 1995.

William S. Seegar (U.S. Army Edgewood Research, Development, and Engineering Center) *Space Technology and Natural Resource Conservation.* November 17, 1995.

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Tim V. Cranmer (National Federation of the Blind and The Braille Research Center) *Pencils, Pictures, and Computers: Technologies for the Blind in Sight.* November 3, 1995.

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1994 – 1995

John J. Wozniak (JHU/APL) *Advanced Natural Gas Vehicle Development.* May 26, 1995.

E. Donald Elliott (Fried, Frank, Harris, Shriver, and Jacobson) *Rethinking the Role of Science in Risk Evaluation.* May 19, 1995.

Charles M. Lieber (Harvard Univ., Dept. of Chemistry) *High-Temperature Superconductors: Probing the Magnetic Flux Lines.* May 12, 1995.

James J. Valdes (U.S. Army Edgewood Research, Development, and Engineering Center) *Destruction of the World's Chemical Agent Stockpiles: Alternative Technologies and Political Issues.* May 5, 1995.

Erica Schoenberger (JHU Dept. of Geography and Environmental Engineering) *Corporate Transformations: Culture, Strategy, and Competitiveness.* April 28, 1995.

Michael F. Summers (Univ. of Maryland, Baltimore County) *Structure of HIV-1 Proteins by Nuclear Magnetic Resonance.* April 21, 1995.

David H. DeVorkin (National Air and Space Museum) *APL's Participation in the v-2 Era.* April 14, 1995.

Donald G. Saari (Northwestern Univ., Dept. of Mathematics) *Mathematical Complexity of Simple Economics.* April 7, 1995.

John Wack (National Inst. of Standards and Technology) *Internet Security.* March 24, 1995.

Adam Frederick Falk (JHU Dept. of Physics and Astronomy) *The Beautiful Bottom Quark.* March 17, 1995.

Col. Charles Bolden (U.S. Naval Academy) *The Importance of Space Exploration by Humans.* March 10, 1995.

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Maria T. Zuber (JHU Dept. of Earth and Planetary Sciences) *Shape and Internal Structure of the Moon From the Clementine Mission.* January 13, 1995.

Leon Cohen (Hunter College and City Univ. of New York) *Time-Frequency-Scale Description of Signals.* January 6, 1995.

James W. Wagner (Johns Hopkins Univ.) *Measuring Dimensions With Light.* December 16, 1994.

Azriel Rosenfeld (Univ. of Maryland, College Park) *Perspectives on Computer Vision.* December 9, 1994.

Holland C. Ford (Johns Hopkins Univ.) *Searching for Black Holes.* December 2, 1994.

Charles S. Peskin (New York Univ. Courant Inst. of Mathematical Sciences) *Muscle and Blood: A Computer Model of the Heart.* November 18, 1994.

Andrew F. Cheng (JHU/APL) *Near Earth Asteroid Rendezvous: APL's First Planetary Mission.* November 4, 1994.

Ho Jung Paik (Univ. of Maryland, College Park) *Superconducting Gravity Gradiometers: Design and Applications.* October 28, 1994.

James S. Langer (Univ. of California, Santa Barbara) *Dynamics of Earthquakes and Fracture.* October 21, 1994.

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Ernest P. Gray (JHU/APL Ret.) *Reminiscence of My Association With APL Colloquia.* October 7, 1994.

1993 – 1994

Richard B. Kershner, Ray Yuan, and Kim Richeson (JHU/APL) *Transportation Research at APL.* May 27, 1994.

David B. Weishampel (Johns Hopkins Univ.) *Under Our Feet: The Dinosaurs of the East Coast.* May 20, 1994.

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Charles V. Meneveau (Johns Hopkins Univ.) *Self-Similarity of Fractals and Turbulent Flows.* March 18, 1994.

Ivars Peterson (Science News) *Chaos in Newton's Clock: The Historical Origins of Chaos Theory.* March 11, 1994.

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Lawrence Washington (Univ. of Maryland, College Park) *Fermat's Last Theorem.* February 25, 1994.

Alan D. Sloan (Iterated Systems Inc.) *Fractal Image Compression for Pattern Recognition.* February 18, 1994.

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James D. Franson (JHU/APL) *Nonlocality in Quantum Optics: From Paradox to Practical Applications.* December 17, 1993.

Ted W. Keller (IBM Federated Sector Services Corp.) *Providing Quality Software for the Space Shuttle.* December 10, 1993.

Joseph Weber (Univ. of Maryland, College Park) *New Approaches to Neutrino Detection.* December 3, 1993.

William H. Murray (Deloitte and Touche) *Security, Audit, and Control of Client-Server Computer Architectures.* November 19, 1993.

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Albert Wattenberg (Univ. of Illinois) *The Birth of the Nuclear Age: December 2, 1942.* October 22, 1993.

Stanford R. Ovshinsky (Energy Conversion Devices, Inc.) *The Nickel-Metal Hydride Battery for Electric Vehicles.* October 15, 1993.

C. M. Varma (AT&T Bell Laboratories) *Why High-Temperature Superconductivity Is Such an Important Problem.* October 8, 1993.

Robert W. Flower (JHU/APL) *Developing, Using, and Marketing a New Technology for Visualizing Ocular Blood Flow.* October 1, 1993.

1992 – 1993

Klaus H. Jacob and Leonardo Seeber (Columbia Univ. Lamont-Doherty Observatory) *Earthquake Hazards in Eastern North America and the Recent Earthquake Sequence Near Columbia, Maryland.* May 28, 1993.

Donald J. Williams (JHU/APL) *The NASA Galileo Program: Mission to Jupiter.* May 21, 1993.

K. Lande (Univ. of Pennsylvania) *Present Status of Solar Neutrino Observations and Plans for New Experiments.* May 14, 1993.

Anthony F. Garito (Univ. of Pennsylvania) *The Nonlinear Optics of Organic Systems.* May 7, 1993.

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John B. Fenn (Yale Univ., 2002 Nobel Prize for Chemistry) *Electrospray Mass Spectrometry: Wings for Molecular Elephants.* April 23, 1993.

Haris N. Koutsopoulos (Massachusetts Inst. of Technology) *Intelligent Vehicle-Highway Systems.* April 16, 1993.

Joel Darmstadter (Resources for the Future) *Policy Options for Managing the Greenhouse Problem.* April 9, 1993.

Eleanor Chelimsky (Government Accounting Office) *Interactions of Social Science and Public Policy.* April 2, 1993.

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Robert K. Adair (Yale Univ.) *The Physics of Baseball.* March 19, 1993.

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John M. Logsdon (George Washington Univ.) *The Outlook for the Space Program in the Clinton Administration.* February 19, 1993.

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Robert R. Birge (Syracuse Univ.) *The Biochemistry of the Visual Process.* February 5, 1993.

Chia-Ling Chien (Johns Hopkins Univ.) *Giant Magneto-Transport Properties in Artificially Structured Solids.* January 29, 1993.

C. Kumar N. Patel (AT&T Bell Laboratories) *Photonics.* January 22, 1993.

A. F. Karr (Univ. of North Carolina and National Inst. of Statistical Sciences) *Buy the Number? A Probabilistic Analysis of the Maryland State Lottery.* January 15, 1993.

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Robert G. Greenler (Univ. of Wisconsin, Milwaukee) *Some Atmospheric Optical Phenomena: Rainbows, Halos, and Glories.* December 18, 1992.

Peter Riesz (National Cancer Inst.) *Some Chemical Effects of Ultrasound.* December 11, 1992.

Ka-Che Yip (Univ. of Maryland, Baltimore County) *Medical Modernization in China: The Search for a Chinese Model.* December 4, 1992.

Lawrence Hunter (National Library of Medicine) *Mega-Classification of Protein Sequences.* November 20, 1992.

Eugene J. Hinman, R. L. Trapp, and Lewis H. Zitzman (JHU/APL) *The Fleet Systems Department in the New World Order.* November 13, 1992.

J. Anthony Tyson (AT&T Bell Laboratories) *Mapping Cosmic Dark Matter.* November 6, 1992.

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Ingrid Daubechies (Rutgers Univ. and AT&T Bell Laboratories) *Wavelets – An Overview.* October 16, 1992.

G. Richard Garritson, J. T. Stadter, John J. Wozniak, Paul J. Waltrup, and F. G. Arcella (JHU/APL) *Aeronautics Department: From Bumblebee to the Twenty-First Century; Engineering Programs in the Aero Department; Applications of Fluid Dynamics; From COBRA to NASP – 48 Years of Ramjet Engine Development at APL; Meeting New Opportunities.* October 9, 1992.

Noel C. MacDonald (Cornell Univ.) *Nanomechanisms for Transporting Atoms, Molecules, and Other Small Objects.* October 2, 1992.

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Donald L. Eddins, John M. Watson, and Ronald L. Wilson (JHU/APL) *Strategic Systems Department – The Challenges of the Past and the Promise of the Future; The Birth of SSD (1955-1964); APL Involvement in Containing Soviet Expansionism; The 90s and Beyond.* September 11, 1992.

J. R. Austin, Christina Myles-Tochko, Mark A. Baker, Jeffrey L. Hanson, and R. J. Taylor (JHU/APL) *The Ocean Environment: Introduction; Global Ocean Characteristics; Internal Ocean Dynamics; Sound in the Ocean; Remote Sensing of the Ocean.* July 10, 1992.

D. M. Pardoll (Johns Hopkins Univ.) *Molecular Engineering of the Anti-Tumor Immune Response.* June 12, 1992.

John C. Sommerer (JHU/APL) *Confronting Chaos Theory With Experiments.* June 5, 1992.

Vitaly L. Ginzburg (Russian Academy of Sciences, Lebedev Physical Inst., 2003 Nobel Prize for Physics) *High Temperature Superconductivity.* June 1, 1992.

Albert A. Galeev (Inst. for Space Research, Russia) *Space Research in the Former Soviet Union.* May 29, 1992.

Steven Muller (Twenty-First Century Foundation) *Technology and Society in the 21st Century.* May 15, 1992.

James W. Head III (Brown Univ.) *Venus Volcanism: Recent Results From Magellan.* May 8, 1992.

S. Fred Singer (Univ. of Virginia) *Are Human Activities Affecting the Climate?* May 1, 1992.

S. Leslie Misrock (Pennie and Edmonds) *Planning for and Surviving the Patent Wars of the 1990s.* April 24, 1992.

Eric D. Young (Johns Hopkins Univ.) *Information Processing in the Auditory System.* April 17, 1992.

John Dassoulas, George C. Weiffenbach, William H. Guier, Alexander Kossiakoff, Carl O. Bostrom, Vincent L. Pisacane, and Stamatios M. Krimigis (JHU/APL) *Thirty-Five Years of Space Science at the Applied Physics Laboratory.* April 10, 1992.

George W. Wetherill (Carnegie Institution of Washington) *The Formation of the Solar System.* April 3, 1992.

C. W. Francis Everitt (Stanford Univ.) *Testing of Einstein in Space: A Marriage of Physics and Technology.* March 27, 1992.

Murray Feshbach (Georgetown Univ.) *Health and Environmental Crises in the Former Soviet Union.* March 20, 1992.

Andrea Prosperetti (Johns Hopkins Univ.) *The Sound of Bubbles.* March 13, 1992.

Alan J. Krupnick (Resources for the Future) *The Cost and Benefits of Smog Control.* March 6, 1992.

Steven H. Hanke (Johns Hopkins Univ.) *Transforming the Russian Economy.* February 28, 1992.

Arthur F. Hebard (AT&T Bell Laboratories) *C_{60}: From Soot to Superconductivity.* February 21, 1992.

T. Mitchell (North Carolina State Univ.) *A Fault-Tolerant Super Network of the U.S. Air Force's Major Operational Commands.* February 14, 1992.

P. Meakin (DuPont Co.) *Droplet Coalescence: Physics Applications and Aesthetics.* February 7, 1992.

Stephen P. Maran (NASA Goddard Space Flight Center) *What the Hubble Telescope Is Telling Us.* January 31, 1992.

Jagdish Narayan (National Science Foundation and North Carolina State Univ.) *Emerging Areas in Materials Research.* January 24, 1992.

Christopher J. Burrows (JHU Space Telescope Science Inst.) *Fixing the Hubble Space Telescope.* January 17, 1992.

G. R. Uhl (Johns Hopkins Univ. and National Inst. for Drug Abuse) *Structure of the Dopamine Transporter: Receptor for Cocaine and Parkinson's Disease Neurotoxins.* January 10, 1992.

Gerald Cook (George Mason Univ.) *Two Topics in Robotics: Kinematic Redundancy and Uncertain Environments.* January 3, 1992.

Emil Wolf (Univ. of Rochester) *The Redshift Controversy and Correlation-Induced Changes in Spectra.* December 13, 1991.

Calvin F. Quate (Stanford Univ.) *Imaging and Surface Modification With Scanning Probes: The Tunneling and Force Microscopes.* December 6, 1991.

Peter C. Searson (Johns Hopkins Univ.) *Light-Emitting Porous Silicon Structures.* November 22, 1991.

Robert E. Kanigel (Johns Hopkins Univ.) *Ramanujan: The Man Who Knew Infinity.* November 8, 1991.

Leonard Shlain (Author) *Art and Physics: Parallel Visions in Space, Time, and Light.* November 1, 1991.

Fereydoon F. Family (Emory Univ.) *Dynamics of Fractal Surfaces.* October 25, 1991.

Praveen Chaudhari (IBM T. J. Watson Research Center) *Critical Current, Grain Boundaries, and SQUIDS in the High Temperature Superconductors.* October 18, 1991.

Alexander J. Dessler (Rice Univ.) *The Dirigible and the Space Shuttle: An Historic Analogy.* October 11, 1991.

Quentin E. Dolecek (JHU/APL) *Scientific Visualization With Personal Computers.* October 4, 1991.

1990 – 1991

W. H. Munk (Scripps Inst. of Oceanography) *Global Acoustics.* September 27, 1991.

Eliot A. Cohen (JHU School of Advanced International Studies) *American Strategy After Desert Storm.* June 7, 1991.

Timothy A. Fischell (Stanford Univ.) *Advances in the Treatment and Understanding of Coronary Artery Disease.* May 24, 1991.

Marc A. Kastner (Massachusetts Inst. of Technology) *The Single Electron Transistor.* May 17, 1991.

Thomas C. Schelling (Univ. of Maryland, 2005 Nobel Prize for Economics) *Meeting the Greenhouse Challenge.* May 10, 1991.

Phillip G. Nelson (National Institutes of Health) *Electrical Activity and Development of the Nervous System.* April 26, 1991.

Roald Z. Sagdeev (Univ. of Maryland) *Crisis of the Soviet Space Science Program.* April 19, 1991.

Katherine J. Strandburg (Northwestern Univ. and Argonne National Laboratory) *Phase Transitions in Limited-Connectivity Neural Networks.* April 12, 1991.

Richard E. Smalley (Rice Univ., 1996 Nobel Prize for Chemistry) *C_{60}: Chapter Two.* March 29, 1991.

Robert Costanza (Univ. of Maryland Chesapeake Biological Laboratory) *Ecological Economics.* March 22, 1991.

Samuel T. Durrance and Arthur F. Davidsen (JHU Center for Astrophysical Sciences) *The Hopkins Ultraviolet Telescope: An Odyssey in Space and Time.* March 19, 1991.

Mark A. Reed (Yale Univ.) *Quantum Semiconductor Nanostructures: Physics and Applications.* March 8, 1991.

Donald L. Price (Johns Hopkins Univ.) *The Neurobiology of Alzheimer's Disease and Animal Models: Mechanisms of Disease and Prospects for Therapy.* March 1, 1991.

Horst L. Stormer (AT&T Bell Laboratories, 1998 Nobel Prize for Physics) *Optics With Two-Dimensional Electrons.* February 22, 1991.

Ronald E. Gots (National Medical Advisory Service) *Toxins and Health: Science vs. Perception.* February 15, 1991.

Michael E. Prise (AT&T Bell Laboratories) *Optical Computation Using SEEDs (Self-Electro-Optic Effect Devices).* February 8, 1991.

Jerry R. Williams (Johns Hopkins Univ.) *Treatment of Cancer With Radiolabeled Antibodies.* February 1, 1991.

Moise H. Goldstein (Johns Hopkins Univ.) *Speech Processing by Real and Silicon Ears.* January 25, 1991.

Dwight L. Jaggard (Univ. of Pennsylvania) *Fractal Electrodynamics.* January 18, 1991.

Ralph R. Weichselbaum (Univ. of Chicago) *Molecular Mechanisms for Radiation Metabolism in Tumor Cells.* January 4, 1991.

Carl E. Wieman (JILA and Univ. of Colorado, 2001 Nobel Prize for Physics) *Developments in Laser Trapping and Cooling.* December 14, 1990.

Wayne M. Itano (National Inst. of Standards and Technology) *The Quantum Zeno Effect.* December 7, 1990.

Guy M. McKhann (Johns Hopkins Univ.) *Approaches to the Neurobiology of Language.* November 30, 1990.

Raymond G. Roble (National Center for Atmospheric Research) *Modeling the General Circulation of the Thermosphere/Ionosphere and the Response to Solar Variability.* November 16, 1990.

Bassam Z. Shakhashiri (Univ. of Wisconsin) *Communicating Science.* November 9, 1990.

Gerald M. Masson (Johns Hopkins Univ.) *Software Fault Tolerance Using Certification Trails.* November 2, 1990.

Ronald M. Atlas (Univ. of Louisville) *Bioremediation of Oil Spills.* October 26, 1990.

Edwin L. Turner (Princeton Univ.) *Gravitational Lensing and Cosmology.* October 19, 1990.

James A. Yorke (Univ. of Maryland) *Chaos and Fractals in the Forced Damped Pendulum.* October 12, 1990.

Kevin E. Trenberth (National Center for Atmospheric Research) *Global Warming and Recent Climate Change: Observation and Modeling.* October 5, 1990.

1989 – 1990

Edmond C. Roelof (JHU/APL) *Global Imaging of Planetary Magnetospheres.* September 28, 1990.

Paul H. Nitze (JHU School of Advanced International Studies) *From Hiroshima to Glasnost: Reflections on Four Perilous Decades.* June 15, 1990.

Michael W. Roth (JHU/APL) *Neural Networks, Machine Vision, and Automatic Target Recognition.* June 1, 1990.

Joseph Zyss (Centre National d'Études des Télécommunications) *Symmetry, Chemistry, and Optics: Approach to Molecular Engineering in Nonlinear Optics.* May 18, 1990.

Donald J. Kessler (NASA Johnson Space Center) *Orbital Debris: Implications for Spacecraft Operations.* May 11, 1990.

Salvatore R. DiNardi (Univ. of Massachusetts, Amherst) *Indoor Air Quality.* May 4, 1990.

Alexander Szalay (Johns Hopkins Univ.) *Correlations of Galaxies on a Cosmic Scale.* April 27, 1990.

Daniel J. Kleitman (Massachusetts Inst. of Technology) *Computational Complexity and Economics.* April 20, 1990.

Reinhold C. Mann (Oak Ridge National Laboratory) *Mobile Robotics for Nuclear-Energy-Related Applications.* April 13, 1990.

Anthony R. Eastham (Queen's Univ., Canada) *Magnetically Levitated Trains.* April 6, 1990.

Thomas S. Mang (Roswell Park Memorial Inst.) *Clinical Treatment of Various Cancer Types by Means of Photodynamic Therapy.* March 30, 1990.

Alfred Y. Wong (Univ. of California, Los Angeles) *Active Global Experiments for Preserving the Ozone Layer.* March 23, 1990.

D. F. Strobel (Johns Hopkins Univ.) *The Atmospheres of the Outer Planets and Their Satellites.* March 16, 1990.

A. Refik Kortan (AT&T Bell Laboratories) *Scanning Tunneling Microscope Observations of Nonperiodic Crystals.* March 9, 1990.

Edward C. Stone (California Inst. of Technology) *The Voyager Encounter With Neptune.* March 1, 1990.

Nancy W. Boggess (NASA Goddard Space Flight Center) *The Initial Cosmic Background Explorer (COBE) Results.* February 23, 1990.

Joseph J. Tribbia (National Center for Atmospheric Research) *Modern Weather Prediction.* February 16, 1990.

Zlatko Tesanovic (Johns Hopkins Univ.) *Superconductivity in a Very High Magnetic Field.* February 9, 1990.

Roderick V. Jensen (Yale Univ.) *Chaos in Classical and Quantum Systems: From Atoms to Asteroids.* February 2, 1990.

Samuel A. Werner (Univ. of Missouri, Columbia) *The Aharanov-Bohm Effect With Neutrons.* January 26, 1990.

Peter L. Olson (Johns Hopkins Univ.) *The Structure of Convection in the Earth's Mantle.* January 19, 1990.

Walter J. Doherty (IBM T. J. Watson Research Laboratories) *Computing Directions for the 1990s.* January 12, 1990.

Henry A. Kues (JHU/APL) *Effects of RF Radiation on the Primate Eye.* January 5, 1990.

Theodore B. Taylor (Independent Consultant) *Nuclear Disarmament: How Far Shall We Go?* December 15, 1989.

Bruce A. Barnett (Johns Hopkins Univ.) *New Results From the Stanford Linear Collider Z^0 Experiment: A Limit on the Number of Neutrino Types.* December 1, 1989.

Allan R. Robinson (Harvard Univ.) *Progress in Geophysical Fluid Dynamics.* November 17, 1989.

Barbara G. Levi (Physics Today) *Land Based Missiles: The Basis for Decision.* November 10, 1989.

Bruno W. Augenstein (RAND Corp.) *Antiproton Science and Technology.* November 3, 1989.

Martin O. Harwit (National Air and Space Museum) *Astronomical Discovery and Astrophysical Understanding.* October 27, 1989.

Richard J. Samuels (MIT Japan Program) *Getting America Ready for Japanese Science and Technology.* October 20, 1989.

K. K. Bajaj (Arizona State Univ.) *Quantum Well Opto-Electronics.* October 13, 1989.

Robert C. Dynes (AT&T Bell Laboratories) *Vortex States in Superconductors: Microscopics and Macroscopics.* October 6, 1989.

1988 – 1989

John R. Apel (JHU/APL) *Internal Waves in a Norwegian Fjord: 'Dead Water' Revisited.* September 29, 1989.

Farouk El-Baz (Boston Univ.) *In Search of Pharaoh's Boat.* May 26, 1989.

James J. Griffin (Univ. of Maryland) *Quadronium – Rosetta Stone for the Electron-Positron Puzzle.* May 19, 1989.

Frank Whittle (Royal Air Force Ret.) *ISOABE Award Address: The Invention and Development of the Gas Turbine Engine.* May 12, 1989.

David Emin (Sandia National Laboratories) *Large Bipolarons and High-Temperature Superconductivity.* May 5, 1989.

Raul Fainchtein (JHU/APL) *Scanning Tunneling Microscopy and Spectroscopy at APL.* April 28, 1989.

Thomas H. Stix (Princeton Univ.) *Atmospheric Processing.* April 14, 1989.

Paul S. Miller (Johns Hopkins Univ.) *Potential Therapeutic Applications for Anti-Sense Nucleic Acid Analogs.* April 7, 1989.

Alexander J. Dessler (Rice Univ.) *Status of the Small-Comet Hypothesis.* March 31, 1989.

Julian H. Krolik (Johns Hopkins Univ.) *Problems in the Formation of the Cosmic Microwave Background.* March 24, 1989.

John Sheffield (Oak Ridge National Laboratory) *Fusion Energy.* March 17, 1989.

Paul D. Lett (National Inst. of Standards and Technology) *Laser Cooling of Atoms to Microkelvin Temperatures.* March 10, 1989.

Roger A. Morse (Cornell Univ.) *The Africanized Honeybee.* March 3, 1989.

Eugene N. Parker (Univ. of Chicago) *Do We Really Understand Our Nearest Star – The Sun?* February 24, 1989.

Arthur W. Sleight (DuPont Co. and Univ. of California, Santa Barbara) *The Chemist's View of High Temperature Superconductivity.* February 17, 1989.

Steven H. Hanke (Johns Hopkins Univ.) *Privatization: Public Versus Private Costs.* February 10, 1989.

Rafael De La Llave (Princeton Univ.) *Computer Assisted Proofs in Mathematical Physics.* February 3, 1989.

Jordan A. Goodman (Univ. of Maryland) *The Anomalous Muon Content of Air Showers From Hercules X-1.* January 27, 1989.

Masayoshi Masuda (Research Association of Superconducting Magnetic Storage, Japan) *Recent Topics on Energy Storage Using Superconductivity.* January 20, 1989.

Paul D. Garnett (Syscon Corp.) *Computer Viruses.* January 13, 1989.

O. W. Greenberg (Univ. of Maryland) *How Well Is the Pauli Exclusion Principle Obeyed?* January 6, 1989.

Kishin Moorjani (JHU/APL) *Superconducting Technology: A Look at Japan.* December 16, 1988.

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Richard S. Muller (Univ. of California, Berkeley) *New Opportunities With Microdynamic Systems.* December 2, 1988.

Celso Grebogi (Univ. of Maryland) *Chaos and Fractals in NonLinear Dynamics.* November 18, 1988.

Henry F. Gray (Naval Research Laboratory) *Field Emitter Arrays: A Basis for Vacuum Microelectronics.* November 11, 1988.

Abner Shimony (Boston Univ.) *Hidden Variables and Bell's Theorem: Theory and Experiment.* November 4, 1988.

Alexander E. Kaplan (Johns Hopkins Univ.) *Nonlinear and Quantum Optics of a Single Electron.* October 28, 1988.

John N. Bahcall (Inst. for Advance Study) *Solar Neutrinos.* October 21, 1988.

Harry K. Charles Jr. (JHU/APL) *Electronic Packaging.* October 14, 1988.

David A. Savitz (Univ. of North Carolina) *Childhood Cancer and Exposure to 60-Hz Magnetic Fields From Power Lines.* October 7, 1988.

1987 – 1988

Benjamin F. Chao (NASA Goddard Space Flight Center) *Earthquake Effects on the Earth's Rotation.* May 27, 1988.

Charles C. Kilgus (JHU/APL) *Three Years of Geosat Results.* May 20, 1988.

Harold A. McAlister (Georgia State Univ.) *Optical High-Resolution Astronomy.* May 13, 1988.

Max Dresden (SUNY Stony Brook) *Courage and Success in Science: Episodes in the Life of H. A. Kramers.* May 6, 1988.

Michael F. Schlesinger (Office of Naval Research) *History of Probability.* April 29, 1988.

Douglas G. Mose (George Mason Univ.) *Indoor Radon Problem Areas in Maryland and Virginia.* April 22, 1988.

Allan R. Sandage (Johns Hopkins Univ. and California Inst. of Technology) *Did the World Begin?* April 15, 1988.

David Emin (Sandia National Laboratories) *Icosahedral Boron-Rich Solids as Very High Temperature Semiconductors.* April 8, 1988.

Howard Simons (Harvard Univ.) *Reporting Science.* April 1, 1988.

Robert P. Kirshner (Harvard Univ.) *The Supernova of a Lifetime.* March 25, 1988.

G. L. Kane (Univ. of Michigan) *Why Physics Needs the Superconducting Super-Collider.* March 18, 1988.

Mark R. Schoeberl (NASA Goddard Space Flight Center) *An Overview of the Antarctic Ozone Depletion.* March 11, 1988.

Gerald M. Rosen and Gregory B. Bulkley (Johns Hopkins Univ.) *The Detection of Free Radicals in Biological Systems: Implications in Human Disease.* March 4, 1988.

Rustum Roy (Pennsylvania State Univ.) *Materials by Design: Diamond Films, Nanocomposites, and Zero-Expansion Ceramics.* February 26, 1988.

Stephen Tolchin (Pyramid Technology) *Networking, Computing, and Differentiation.* February 19, 1988.

Jeffrey Greenhut (U.S. Department of the Army) *History, Weather, and War.* February 12, 1988.

Owen P. Bricker (U.S. Geological Survey) *Acid Rain: History and Current Research.* February 5, 1988.

Myron L. Weisfeldt (Johns Hopkins Univ.) *Current Strategies in the Treatment of Heart Attacks.* January 29, 1988.

Frank Brody and John Sokich (National Meteorological Center) *Heavy Snow Forecasting.* January 22, 1988.

Jene A. Golovchenko (Harvard Univ.) *A Look at the World Through the Tunneling Electron Microscope.* January 15, 1988.

Brian P. Flannery (Exxon Research and Engineering) *Three-Dimensional X-Ray Microtomography.* December 18, 1987.

Richard T. Greene (Cognitive Technologies Associates) *Japanese Techniques in Artificial Intelligence, Education, and Research Administration and the Competitiveness Problem.* December 11, 1987.

Thomas F. Zuck (Univ. of Cincinnati) *New Strategies for Detecting the AIDS Virus.* December 4, 1987.

Roald Z. Sagdeev (Director, Soviet Institute for Space Research) *The Soviet Space Program.* November 20, 1987.

Louis J. Lanzerotti (AT&T Bell Laboratories) *The Crisis in Space Science.* November 13, 1987.

Joel R. Primack (Univ. of California, Santa Cruz) *Cosmology and Particle Physics With Dark Matter.* November 6, 1987.

Alan P. Boss (Carnegie Institution of Washington) *Protostellar Collapse and Star Formation.* October 30, 1987.

Samuel J. Williamson (New York Univ.) *Neuromagnetism: A New Window Into the Brain.* October 23, 1987.

H. Kent Bowen (Massachusetts Inst. of Technology) *Ceramics as Engineering Materials: From Heat Engines to Superconductors.* October 16, 1987.

Kishin Moorjani (JHU/APL) *High Temperature Superconductivity.* October 9, 1987.

Robert Cheney (National Oceanic and Atmospheric Administration) *Sea Level Variability in the Tropical Pacific From GEOSAT.* October 2, 1987.

1986 – 1987

Robert E. Jenkins (JHU/APL) *VLSI, Cellular Automata, and Application-Specific Processors.* May 29, 1987.

Robert M. Williams (Defense Advanced Research Projects Agency) *The National AeroSpace Plane Program – Technology for America's Future.* May 22, 1987.

Robert W. Gammon (Univ. of Maryland) *Critical Fluid Light Scattering on the Shuttle.* May 15, 1987.

Francis C. Moon (Cornell Univ.) *Chaos and Unpredictability in Magnetic Systems.* May 8, 1987.

Jean M. Bennett (Univ. of Alabama) *Optics, Art, and Surface Evaluation Techniques for Optics of the Future.* May 1, 1987.

R. Rammal (AT&T Bell Laboratories) *1/f Noise in Disordered Media.* April 24, 1987.

Alan C. Walker (Johns Hopkins Univ.) *New Fossil Evidence for Human Evolution.* April 17, 1987.

Richard F. Voss (IBM T. J. Watson Research Center) *Fractals in Nature.* April 10, 1987.

J. F. McCauley (U.S. Geological Survey and Northern Arizona Univ.) *The Paleo-Drainage of the Central Sahara as Revealed by Shuttle Imaging Radar.* April 3, 1987.

Larry L. Smarr (Univ. of Illinois) *Computer Visualization of the Solutions to the Laws of Nature.* March 27, 1987.

Thomas B. Cochran (Natural Resources Defense Council) *Verification of a Comprehensive Nuclear Test Ban.* March 20, 1987.

Laurie M. Brown (Northwestern Univ.) *Theories of the Nucleus in the 1930's.* March 13, 1987.

Paul D. Feldman (Johns Hopkins Univ.) *Halley's Comet in Retrospect – A Spectroscopic View.* March 6, 1987.

Gary A. Prinz (Naval Research Laboratory) *Magnetic Overlayers on Gallium Arsenide Substrates.* February 27, 1987.

Warren Siegel (Univ. of Maryland) *String Field Theory – A Theory of Everything.* February 20, 1987.

Jeffrey A. Brinker (Johns Hopkins Univ.) *The Use of Balloon Angioplasty in the Treatment of Heart Disease.* February 13, 1987.

Francis Halzen (Univ. of Wisconsin) *Cosmic Acceleration.* February 6, 1987.

Jeffery Bub (Univ. of Maryland) *From Micro to Macro: Reflections on Schrödinger's Cat.* January 30, 1987.

Jean B. Freedman (National Bureau of Standards) *An Overview of Optical Disc Technology.* January 23, 1987.

Gloria B. Lubkin (Physics Today) *Adventures of a Physics Reporter.* January 16, 1987.

Terrence J. Sejnowski (Johns Hopkins Univ.) *Processing Signals and Symbols With Neural Network Models.* January 9, 1987.

Robert E. Fischell (JHU/APL) *The Programmable Implantable Medication System (PIMS): High-Tech Medicine.* December 12, 1986.

John R. Dudeney (British Antarctic Survey) *Antarctica – A Continent for Science.* December 5, 1986.

Vera C. Rubin (Carnegie Institution) *Dark Matter in the Universe.* November 21, 1986.

Mark O. Robbins (Johns Hopkins Univ.) *Colloidal Crystals and Liquids: Phase Diagrams and Dynamics.* November 14, 1986.

Christopher F. D'Elia (Univ. of Maryland) *Nutrient Enrichment and the Chesapeake Bay.* November 7, 1986.

Harold P. Furth (Princeton Univ. Plasma Physics Laboratory) *Progress Towards a Tokamak Fusion Reactor.* October 31, 1986.

Joseph Klafter (Exxon Research Laboratories) *Relaxation in Complex Systems.* October 24, 1986.

Paul J. Steinhardt (Univ. of Pennsylvania) *Quasicrystals.* October 17, 1986.

Herbert A. Simon (Carnegie-Mellon Univ., 1978 Nobel Prize for Economics) *Scientific Discovery: A Psychological Account.* October 10, 1986.

Andrew F. Cheng (JHU/APL) *Magnetospheres of the Outer Planets.* October 3, 1986.

1985 – 1986

Alvin M. Weinberg (Inst. for Energy Analysis) *Chernobyl and the Future of Nuclear Energy.* September 25, 1986.

Colin J. Pennycuick (Univ. of Miami) *Animal Locomotion on Earth and Other Planets.* June 6, 1986.

John C. Murphy (JHU/APL) *Dynamic Thermal Imaging of Materials.* May 30, 1986.

Akira Hasegawa (AT&T Bell Laboratories) *A New Approach to Nuclear Fusion.* May 23, 1986.

David M. Pepper (Hughes Research Laboratory) *Physics and Applications of Optical Phase Conjugation.* May 16, 1986.

Lawrence A. Soderblom (U.S. Geological Survey) *Uranus Through the Eyes of Voyager 2.* May 9, 1986.

Harold C. Deutsch (U.S. Army War College Ret.) *Did ULTRA and MAGIC Win World War II?* May 2, 1986.

Robert E. Kemelhor (JHU/APL) *Automation in Japan, the U.S., and at APL.* April 25, 1986.

Robert W. Keyes (IBM T. J. Watson Research Center) *What Makes a Good Computer Device?* April 18, 1986.

Paul A. Bottomley (General Electric Research Laboratory) *Localized NMR Spectroscopy in Man.* April 11, 1986.

Jerome B. Wiesner (Massachusetts Inst. of Technology) *Enhancing the Man/Machine Interface: MIT's Media Technology Laboratory.* April 4, 1986.

Dennis Avery (U.S. Dept. of State) *Rising World Food Productivity.* March 28, 1986.

Kendall Preston Jr. (Carnegie-Mellon Univ.) *Cellular Logic Algorithms for Image Analysis.* March 21, 1986.

Paul W. Klipsch (Klipsch and Associates) *Distortion of Loudspeakers.* March 14, 1986.

Horst L. Stormer (AT&T Bell Laboratories, 1998 Nobel Prize for Physics) *The Fractional Quantized Hall Effect.* March 7, 1986.

Richard E. Slusher (AT&T Bell Laboratories) *Squeezing the Vacuum in an Optical Cavity.* February 28, 1986.

Kenneth Laws (Dickinson College) *The Physics of Dance.* February 21, 1986.

Michael E. Summers (Johns Hopkins Univ.) *Supersonic Meteorology and Other Unusual Processes in Io's Atmosphere.* February 14, 1986.

Jack Wisdom (Massachusetts Inst. of Technology) *Chaotic Processes in the Solar System.* February 7, 1986.

J. Steven Hansen (JHU/APL) *Bioelectromagnetic Investigations at APL.* January 31, 1986.

Capt. Nicholas Brown (U.S. Navy Ret., National Aquarium in Baltimore) *National Aquarium Update.* January 24, 1986.

Victor A. McKusick (Johns Hopkins Univ.) *Mapping the Chromosomes of Man.* January 17, 1986.

Robert Frosch (General Motors Research Laboratories) *An Industrial Laboratory.* January 10, 1986.

Frederick Scarf (TRW Systems) *International Cometary Explorer (ICE) Observations of Comet Giacobini-Zimmer.* January 3, 1986.

Michael Nacht (Univ. of Maryland) *Why Nuclear Deterrence Will Not Go Away.* December 13, 1985.

Richard J. Feldmann (National Institutes of Health) *Computer Modeling of Macromolecules.* December 6, 1985.

Eugene M. Rasmusson (National Oceanic and Atmospheric Administration) *The El Niño Southern Oscillation Phenomenon and Global Climate Variability.* November 22, 1985.

James J. Rhyne (National Bureau of Standards) *Neutron Scattering and Its Applications.* November 15, 1985.

Jan F. Herbst (General Motors Corp.) *A New Era in Permanent Magnets.* November 8, 1985.

Michael O. Rabin (Harvard Univ.) *Maximum Matching Without Tears.* November 1, 1985.

Howard T. Savage (Naval Surface Weapons Center, Silver Spring) *Magnetoelastic Bifurcations in Amorphous Ribbons.* October 25, 1985.

Fereydoon F. Family (Emory Univ. and Massachusetts Inst. of Technology) *Fractals in Aggregation Phenomena.* October 18, 1985.

Juri Toomre (Univ. of Colorado) *Solar Seismology.* October 11, 1985.

Richard S. Fiske (Smithsonian Institution) *Krakatau: The Giant Volcanic Eruption a Century Ago.* October 4, 1985.

1984 – 1985

Quentin E. Dolecek (JHU/APL) *Wavefront Array Processing.* September 27, 1985.

Harold Brown (JHU School for Advanced International Studies) *Technology and National Security.* May 17, 1985.

Eugene Garfield (Inst. for Scientific Information) *How Multidisciplinary Is the Applied Physics Laboratory? Some Answers From the Science Citation Index.* May 10, 1985.

Gareth M. Green (Johns Hopkins Univ.) *Community Response to Massive Exposure to Toxic Gases: Lessons From Bhopal.* May 3, 1985.

Linn F. Mollenauer (AT&T Bell Laboratories) *Solitons in Optical Fibers and the Soliton Laser.* April 26, 1985.

Mark R. Fuller (Patuxent Wildlife Research Center) *Tracking Birds by Satellite: Toward the Ends of the Earth.* April 19, 1985.

Richard M. Osgood Jr. (Columbia Univ.) *Laser-Induced Chemistry for Microelectronics.* April 12, 1985.

S. Rao Kosaraju (Johns Hopkins Univ.) *The Theory of VLSI.* April 5, 1985.

Norman H. Packard (Institute for Advanced Study) *Cellular Automata.* March 29, 1985.

Joseph Weber (Univ. of Maryland, College Park) *Gravitational Antennas and the Search for Gravitational Radiation.* March 22, 1985.

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Richard G. Palmer (Duke Univ.) *Broken Ergodicity.* March 8, 1985.

Ray H. Baughman (Allied Chemical Corp.) *Polymeric Metals – An Overview.* March 1, 1985.

Jose Peixoto (Univ. of Lisbon) *The Physics of Climate.* February 22, 1985.

Charles W. Roberson (Office of Naval Research) *The Free Electron Lasers.* February 15, 1985.

Julian L. Simon (Univ. of Maryland) *Life on Earth Is Getting Better.* February 8, 1985.

Hervey S. Stockman Jr. (Space Telescope Science Inst.) *The Space Telescope: Scientific Instrumentation and General Progress.* February 1, 1985.

Stephen M. Kosslyn (Harvard Univ.) *Visual Mental Imagery and Hemispheric Specialization: A Computational Approach.* January 25, 1985.

Charles A. Zraket (Mitre Corp.) *Strategic Command and Control.* January 11, 1985.

David E. Smith (NASA Goddard Space Flight Center) *Evidence of Tectonic Plate Motions From Space Measurements.* January 4, 1985.

Howard Brody (Univ. of Pennsylvania) *The Physics of Tennis.* December 14, 1984.

H. Eugene Stanley (Boston Univ.) *Fractals: Concept, Fundamentals, and Examples From Material Science.* December 7, 1984.

S. Fred Singer (Univ. of Virginia) *High Level Nuclear Waste Disposal.* November 30, 1984.

Michael R. Rampino (NASA Goddard Inst. for Space Studies) *Geological Rhythms, Mass Extinctions, and Cometary Impacts.* November 16, 1984.

Stephen M. Girvin (National Bureau of Standards) *The Quantum Hall Effect.* November 9, 1984.

Michael J. Frankel (Defense Nuclear Agency) *Fire and Ice: Firestorms and the Nuclear Winter Hypothesis.* November 2, 1984.

Rolf W. Landauer (IBM Research Center) *Fundamental Physical Limitations on the Computational Process.* October 26, 1984.

Bruce I. Blum (JHU/APL) *Clinical Information Systems.* October 12, 1984.

Michael J. Salkind (Air Force Office of Scientific Research) *Fiber Composites: A New Era in Design and Manufacture.* October 5, 1984.

1983 – 1984

John J. Hopfield (California Inst. of Technology) *The Physics of Biological Memory.* June 8, 1984.

ADM Bobby R. Inman (U.S. Navy Ret., Microelectronics and Computer Technology Corp.) *The Computer Challenge.* June 1, 1984.

Stamatios M. Krimigis (JHU/APL) *Particle Injection Experiments in Space: The Active Magnetospheric Particle Tracer Explorers (AMPTE) Program.* May 25, 1984.

W. Peter Trower (Virginia Polytechnic Inst. and State Univ.) *Free Fractional Charge: The Evidence and the Consequences.* May 18, 1984.

David J. Rose (Massachusetts Inst. of Technology) *Global Options for Curbing the Growth of Atmospheric CO_2 Concentration: More Benign Energy Technologies.* May 11, 1984.

Nils Salvesen (Science Applications, Inc.) *The America's Cup Race – Lessons Learned.* May 4, 1984.

Lawrence M. Lidsky (Massachusetts Inst. of Technology) *The Trouble With Fusion.* April 27, 1984.

J. Richard Gott III (Princeton Univ.) *Gravitational Lenses.* April 20, 1984.

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Henry N. Wagner (Johns Hopkins Univ.) *A New Approach to Brain Chemistry.* April 6, 1984.

Marvin Wunderlich (Northern Illinois Univ.) *Factoring Large Integers on a Massively Parallel Processor.* March 30, 1984.

Norman J. Zabusky (Univ. of Pittsburgh) *Computational Synergetics and Innovation in Nonlinear Science.* March 23, 1984.

Edward Anders (Univ. of Chicago) *Presolar Matter in Meteorites.* March 16, 1984.

Richard F. Mushotzky (NASA Goddard Space Flight Center) *Are There Giant Black Holes at the Center of Quasars and Other Active Galaxies?* March 9, 1984.

Peter M. Rentzepis (Bell Telephone Laboratories) *Picosecond Chemistry and Beyond.* March 2, 1984.

Erica Jen (Los Alamos National Laboratory) *The Dimension of Chaotic Attractors.* February 24, 1984.

Carl Walske (Atomic Industrial Forum) *Is Nuclear Power Still Alive?* February 17, 1984.

Linda E. Reichl (Univ. of Texas, Austin) *Chaos From Field-Induced Resonance in Conservative Systems.* February 10, 1984.

Donald D. Kaufman (U.S. Dept. of Agriculture) *Enhancement by Degradation: A Problem for Some Agricultural Chemicals.* February 3, 1984.

Michael F. Shlesinger (Office of Naval Research) *Three Puzzles With One Solution: Anomalous Transport, Reaction, and Relaxation in Condensed Matter.* January 27, 1984.

Richard A. Carrigan (Fermi National Accelerator Laboratory) *Magnetic Monopoles.* January 20, 1984.

L. B. Felson (Polytechnic Inst. of New York) *Progressing and Oscillatory Formulation of Wave Propagation and Scattering.* January 13, 1984.

Alistair Fraser (Pennsylvania State Univ.) *The Rainbow Bridge.* January 6, 1984.

Eugenie Clark (Univ. of Maryland) *Sea Monsters and Cigar Sharks.* December 9, 1983.

John B. Carlson (Univ. of Maryland) *Venus in the Maya World.* December 2, 1983.

James Trefil (Univ. of Virginia) *The Creation of the Universe: New Thoughts on an Old Question.* November 18, 1983.

Hans Arne Hansson (Univ. of Gothenborg) *The Effect of Electromagnetic Radiation on the Central Nervous System.* November 11, 1983.

Robert M. White (Xerox Corp.) *Magnetic Memories.* November 4, 1983.

James H. McAlear (EMV Associates) *Prospects for Harnessing Biomolecules for Fabricating Molecular and Electronic Structures.* October 28, 1983.

Azriel Rosenfeld (Univ. of Maryland) *Trends and Perspectives in Computer Vision.* October 21, 1983.

N. Anders Olsson (Bell Telephone Laboratories) *Properties and Applications of the Cleaved-Coupled-Cavity Semiconductor Laser.* October 14, 1983.

Elaine Rich (Univ. of Texas) *The Gradual Encroachment of Artificial Intelligence.* October 7, 1983.

1982 – 1983

Robert C. Beal (JHU/APL) *Spaceborne Synthetic Aperture Radar for Oceanography: Five Years After Seasat.* September 30, 1983.

William B. Gevarter (NASA Ames) *An Overview of Expert Systems.* September 23, 1983.

Hans M. Mark (NASA) *The Space Shuttle.* July 1, 1983.

George Schmidt (Stevens Inst. of Technology) *Transitions From Order to Chaos.* May 20, 1983.

Louis F. Libelo (Harry Diamond Laboratory) *The Electromagnetic Pulse (EMP) Effects of High Altitude Nuclear Bursts.* May 13, 1983.

D. Bryant Cramer and Paul C. Rambaut (NASA) *The Physiology of Man in Space.* May 6, 1983.

Stanley D. Shawhan (Univ. of Iowa) *Some Scientific Results From the Space Shuttle: Beam-Plasma Interactions.* April 29, 1983.

Donald B. Sullivan (National Bureau of Standards) *Josephson Electronics.* April 22, 1983.

Richard S. Potember (JHU/APL) *Organic Molecular Devices.* April 15, 1983.

Riccardo Giacconi (Space Telescope Science Inst., 2002 Nobel Prize for Physics) *The Space Telescope and the Space Telescope Science Institute.* April 8, 1983.

Hans H. Landsberg (Resources for the Future) *U.S. Energy: Issues and Policies.* April 1, 1983.

Angeliki Georgopoulis (Johns Hopkins Univ.) *Diabetes Mellitus Under Control: A Challenge to the Patient and the Physician.* March 25, 1983.

Donald B. McIntyre (Pomona College) *Computing Language as an Intellectual Tool: From Hieroglyphics to APL.* March 18, 1983.

J. M. D. Coey (Trinity College, Dublin) *Magnetism, Minerals, and Archaeology.* March 11, 1983.

Ernest W. Kent (National Bureau of Standards) *The Design of Robot Brains.* March 4, 1983.

Geoffrey Wright and Joel Knispel (Peabody Conservatory) *The Analog and Digital Generation of Music.* February 25, 1983.

Kenneth J. Sleger (Naval Research Laboratory) *Gallium Arsenide Integrated Circuits.* February 18, 1983.

M. King Hubbert (U.S. Geological Survey) *The World's Evolving Energy System.* February 4, 1983.

William D. Phillips (National Bureau of Standards, 1997 Nobel Prize for Physics) *Laser Cooling of an Atomic Beam.* January 28, 1983.

Richard C. Henry (Johns Hopkins Univ.) *Thermal Collapse of the Recombined Universe.* January 21, 1983.

Donald C. Licciardello (Princeton Univ.) *Physics in Two Dimensions.* January 14, 1983.

Frederick Breitenfeld Jr. (Maryland Center for Public Broadcasting) *Television in the 90's: A Hazard to Our Health?* January 7, 1983.

John C. Mather (NASA Goddard Space Flight Center, 2006 Nobel Prize for Physics) *The Cosmic Background Explorer: Observing the Primeval Explosion.* December 17, 1982.

Vic Klemas (Univ. of Delaware) *Remote Sensing of Coastal Environment and Marine Resources.* December 10, 1982.

Walter J. Doherty (IBM Research Laboratories) *Interactive Computing at IBM.* December 3, 1982.

Peter L. Olson (Johns Hopkins Univ.) *The Origin of Planetary Magnetism.* November 19, 1982.

Prabahan K. Kabir (Harvard Univ. and Univ. of Virginia) *Time Reversibility in Micro- And Macro-Physics.* November 12, 1982.

David Hannah Jr. and Donald K. "Deke" Slayton (Space Services of America, Inc.) *Low-Cost Expendable Satellites for the Utilization of Space.* November 5, 1982.

Michael S. Turner (Univ. of Chicago) *Are Grand Unified Theories and Cosmology Good for Each Other?* October 29, 1982.

David R. Davies (National Institutes of Health) *Three-Dimensional Structure of Antibodies.* October 22, 1982.

S. Lawrence Marple (The Analytic Sciences Corp.) *An Overview of Modern Spectrum Analysis.* October 15, 1982.

Gart Westerhout (U.S. Naval Observatory) *New Developments in Astrometry: Their Influence on Physics and Astrophysics.* October 8, 1982.

Harvey W. Ko (JHU/APL) *A Modern Magic Carpet: Anomalous Radar Propagation Through Atmospheric Ducts.* October 1, 1982.

1981 – 1982

James W. Follin Jr. (JHU/APL) *A New Theory of the Formation and Evolution of the Solar System.* May 28, 1982.

Arthur Ashkin (Bell Telephone Laboratories) *Applications of Laser Radiation Pressure.* May 21, 1982.

Jerry Lucas (TeleStrategies) *Technology of Interactive Cable TV.* May 14, 1982.

Ronald D. Levine (Technology Development of California) *Supercomputers.* May 7, 1982.

Steven M. Stanley (Johns Hopkins Univ.) *The Punctuational Model of Evolution.* April 30, 1982.

Akira Hasegawa (Bell Telephone Laboratories) *The Transmission of Optical Solitons in Glass Fiber.* April 23, 1982.

Lester B. Lave (Brookings Institution) *Conflicting Objectives in Regulating the Automobile.* April 16, 1982.

William F. Crowley (Harvard Univ.) *Recent Advances in Reproductive Endocrinology.* April 9, 1982.

Peter Franken (Univ. of Arizona) *Optics at the Other Place.* March 26, 1982.

Timothy P. Coffey (Naval Research Laboratory) *New Insight Into the Structure and Instabilities of the Ionosphere.* March 19, 1982.

Edward Ott (Univ. of Maryland) *Strange Attractors.* March 12, 1982.

S. Fred Singer (Univ. of Virginia) *The Future of World Oil.* March 5, 1982.

Hatten S. Yoder (Carnegie Institution) *Heat Transfer in Magma Generation.* February 26, 1982.

Victor L. Granatstein (Naval Research Laboratory) *The Gyrotron.* February 19, 1982.

John R. Apel (JHU/APL) *Solitons and Pirates in the Sulu Sea.* February 12, 1982.

Donald S. Coffey (Johns Hopkins Univ.) *The Structure and Function of the Nuclear Matrix in Biomedical Information Transfer.* February 5, 1982.

J. Thomas August (Johns Hopkins Univ.) *Some Uses of Monoclonal Antibodies.* January 29, 1982.

John M. McQuillan (Bolt, Beranek, and Neuman) *Sending Electronic Mail Over Computer Networks.* January 22, 1982.

Larry W. Sumney (U.S. Department of Defense) *The DoD Very High Speed Integration (VHSIC) Program: Goals and Directions.* January 15, 1982.

Morton H. Friedman (JHU/APL) *Geometric Risk Factors for Arteriosclerosis.* January 8, 1982.

Hans Goedicke (Johns Hopkins Univ.) *Exodus: History and Science.* December 18, 1981.

Melvin Calvin (Univ. of California, 1961 Nobel Prize for Chemistry) *Capturing the Sun's Energy.* December 11, 1981.

Donald E. Polk (Office of Naval Research) *Permanent Magnets: New Directions From Rapid Solidification.* December 4, 1981.

Elliott Montroll (Univ. of Maryland) *On Some Dynamical Models of Socio-Technical Systems.* November 13, 1981.

Scott S. Kirkpatrick (IBM Research) *Spin Glasses.* November 6, 1981.

Alan G. MacDiarmid (Univ. of Pennsylvania, 2000 Nobel Prize for Chemistry) *The Electrochemistry of Polyacetylene, $(CH)_x$: 'Organic Batteries.'* October 30, 1981.

Wilbur L. Pritchard (Satellite Systems Engineering, Inc.) *Direct-Broadcasting Satellites in the United States.* October 16, 1981.

Stamatios M. Krimigis (JHU/APL) *The Magnetosphere and Radiation Belts of Saturn: Results From the Voyager Encounters.* October 9, 1981.

Robert B. Pond (Johns Hopkins Univ.) *The History and Promise of Rapid Solidification.* October 2, 1981.

1980 – 1981

David M. Gates (National Bureau of Standards) *The Ecological Impact of Energy.* June 5, 1981.

Carlton M. Caves (California Inst. of Technology) *Gravitational Wave Detection Confronts the Uncertainty Principle.* May 8, 1981.

David N. Schramm (Univ. of Chicago) *Some Cosmological Consequences of Massive Neutrinos.* May 1, 1981.

William M. Fairbanks (Stanford Univ.) *Observation of Fractional Charge 1/3 E on Matter.* April 24, 1981.

Solomon H. Snyder (JHU School of Medicine) *Drugs, Neurotransmitters, and the Brain.* April 22, 1981.

Stephen G. Bush (Science Teacher) *Scopes Revisited? Must Public Schools That Teach Evolution Give Equal Time to Creationism in Science Classes?* April 10, 1981.

Paul K. Seidelman (U.S. Naval Observatory) *The Perplexing Plant Pluto.* April 3, 1981.

Peter R. Greene (Univ. of Nottingham) *The Biodynamics of Running.* March 27, 1981.

James Van Allen (Univ. of Iowa) *The Magnetosphere of the Planets.* March 20, 1981.

W. Edwards Deming (Engineer) *Some Serious Problems That Hinder Productivity.* March 6, 1981.

I. S. Sacks (Carnegie Inst. of Washington) *Slow Earthquakes.* February 27, 1981.

Bradford A. Smith (Univ. of Arizona) *The Continuing Adventures of Voyager I: The Saturn Encounter.* February 20, 1981.

Gabor Domokos (Johns Hopkins Univ.) *Modern Gauge Theories for Pedestrians.* February 13, 1981.

Takeshi Egami (Univ. of Pennsylvania) *Defects in Amorphous Solids.* February 6, 1981.

John B. Garrison and Robert E. Jenkins (JHU/APL) *Automating Medical Image Analysis.* January 30, 1981.

Bernard G. Campbell (Univ. of California Los Angeles) *The Evolution of Intelligence and Language.* January 23, 1981.

James L. Gould (Princeton Univ.) *The Case for Magnetic Sensitivity in Birds and Bees (Such as It Is).* January 16, 1981.

Murray B. Sachs (Johns Hopkins Univ.) *The Neural Processing of Speech.* January 9, 1981.

Frank J. Tipler (Univ. of Texas) *The Case for an Initial Cosmological Singularity.* December 19, 1980.

Charles C. Counselman (Massachusetts Inst. of Technology) *Very Long Baseline Radio Interferometry.* December 12, 1980.

Theodore B. Taylor (Princeton Univ.) *District Heating and Cooling.* December 5, 1980.

Samuel J. Williamson (New York Univ.) *Evoked Magnetic Fields of the Human Brain.* November 21, 1980.

Donald M. Jansky (U.S. Dept. of Commerce) *The New World Order of the Radio Spectrum.* November 14, 1980.

Thomas C. Van Flandern (U.S. Naval Observatory) *Is the Gravitational Constant Changing?* November 7, 1980.

Jerome D. Frank (Johns Hopkins Univ.) *Psychological Aspects of the Nuclear Arms Race.* October 31, 1980.

Tepilit Ole Saitoti (Author) *Maasai: The Land and the People, and the National Geographic Society Film "Man of the Serengeti."* October 24, 1980.

Robert I. Tilling (U.S. Geological Survey) *Mount St. Helens 1980.* October 17, 1980.

Robert A. Makofski (JHU/APL) *Transportation in Atlantic City: The Casinos Give Better Odds.* October 10, 1980.

Joseph H. Taylor (Univ. of Massachusetts, 1993 Nobel Prize for Physics) *Gravitational Waves and the Binary Pulsar.* October 3, 1980.

1979 – 1980

Myron Genel (Yale Univ.) *Treatment of Diabetes and Other Diseases With External Pumps.* September 26, 1980.

Robert W. Flower (JHU/APL) *The Role of Oxygen in Retinopathy: A 14-Year APL-Wilmer Institute Cooperative Study.* May 30, 1980.

Abraham H. Oort (Princeton Univ.) *The Role of the Oceans in the Earth's Heat Balance.* May 16, 1980.

Joseph S. Weiner (Univ. of London) *The Piltdown Man Hoax: Whodunit?* May 9, 1980.

Michael Mirowski (Sinai Hospital and Johns Hopkins Univ.) *The Automatic Implantable Defibrillator From Inception to Clinical Application.* May 2, 1980.

Walter E. Massey (Argonne National Laboratory) *National Laboratories: What Are They? What Do They Do? Who Cares?* April 25, 1980.

Douglas R. Hofstadter (Univ. of Indiana) *Gödel, Escher, Bach: An Eternal Golden Braid.* April 18, 1980.

Frederick S. Billig (JHU/APL) *A Visit to China.* April 11, 1980.

Allan S. Greenberg (U.S. Dept. of State) *Impressions of Soviet Science and Technology.* April 4, 1980.

Daniel Nathans (Johns Hopkins Univ., 1978 Nobel Prize for Physiology/Medicine) *The New Genetics.* March 28, 1980.

Allen Rosencwaig (Lawrence Livermore Laboratory) *Photoacoustics – Principles and Recent Developments.* March 21, 1980.

Alan A. Schneider (Catalyst Research Corp.) *Electrochemistry of Solid State Batteries.* March 14, 1980.

Phillip E. Leakey (The Leakey Collection) *Fossils to Footprints: Olduvai Gorge and Laetoli, Tanzania.* March 11, 1980.

Kosta M. Tsipis (Massachusetts Inst. of Technology) *Particle Beam Weapons.* March 7, 1980.

Arthur C. Eberle (Columbia Gas System Service Corp.) *A Gas Industry Perspective on Future Energy Resources.* February 29, 1980.

Aihud Pevsner (Johns Hopkins Univ.) *Quarks, Gluons … a Walk Through the Garden of Elementary Particles.* February 22, 1980.

Dennis C. Pirages (Univ. of Maryland) *Designing a Global Future: Some Reflections on the New Social Paradigm.* February 15, 1980.

Norman C. Pickering (Southampton Hospital) *The Physics of Violins.* February 8, 1980.

Robert D. Thulman (Thulman Eastern Corporation) *Fireplaces and Woodburning Stoves.* February 1, 1980.

James N. Galloway (Univ. of Virginia) *The Acid Rain.* January 25, 1980.

Owen M. Phillips (Johns Hopkins Univ.) *An Overview of Our Energy Future.* January 18, 1980.

Hoyt C. Hottel (Massachusetts Inst. of Technology) *Technical – Congressional Interaction on Synthetic Fuel Production.* January 11, 1980.

John A. O'Keefe (NASA Goddard Space Flight Center) *The Riddle of Tektites.* January 4, 1980.

Kenneth M. Case (Rockefeller Univ.) *Solitons: Their Origin and Behavior.* December 14, 1979.

Ernest A. Stern (Univ. of Washington) *Structure Determination by X-Ray Absorption (EXAFS).* December 7, 1979.

James A. Yorke (Univ. of Maryland) *Chaotic Dynamics.* November 30, 1979.

Dorothy Nelkin (Cornell Univ.) *Science as a Source of Political Conflict.* November 16, 1979.

K. L. Chopra (Indian Inst. of Technology and Cornell Univ.) *Thin-Film Solar Cells: CdS-Cu_2S Heterojunctions.* November 9, 1979.

Bernard J. Carr (Cambridge Univ.) *The Anthropic Principle and the Structure of the Physical World: Does the Existence of Life Determine the Physical Constants?* November 2, 1979.

Richard B. Frankel (Frances Bitter National Magnet Laboratory) *A Navigational Compass in Magnetic Bacteria.* October 26, 1979.

Norman C. Rasmussen (Massachusetts Inst. of Technology) *What Does the 1975 Reactor Safety Study Predict Concerning the Accident at Three Mile Island?* October 19, 1979.

Raymond C. Shreckengost (Central Intelligence Agency) *An Overview of System Dynamics and Some Applications.* October 12, 1979.

Gordon L. Dugger (JHU/APL) *Ocean Thermal Energy Conversion.* October 5, 1979.

1978 – 1979

Edmund Skellings (Florida International Univ.) *A Vision of Information.* September 12, 1979.

Bradford A. Smith (Univ. of Arizona) *Rendezvous With a Giant: The Jupiter System as Seen by Voyager Cameras.* June 15, 1979.

Reuven Leopold (Pratt and Whitney) *Future Technology Alternatives in Warship Design.* June 1, 1979.

Aaron Wildavsky (Inst. for Policy and Management) *No Risk Is the Highest Risk of All.* May 25, 1979.

Stamatios M. Krimigis (JHU/APL) *The Magnetosphere of Jupiter – A View From Voyager I.* May 18, 1979.

Donald A. Henderson (Centers for Disease Control) *Problems of Immunization in the Developing World.* May 11, 1979.

Paul S. Sarbanes (U.S. Senate) *Current Trends in Congress.* May 4, 1979.

Alvin M. Weinberg (Inst. for Energy Analysis) *Reflections on the Energy Wars.* May 4, 1979.

Jacques R. Maroni (Ford Motor Company) *Alternative Fuels for Transportation – Economic and Technical Factors.* April 27, 1979.

Max Dresden (State Univ. of New York) *Thermodynamics of Black Holes.* April 20, 1979.

Banesh Hoffman (Queen's College) *Albert Einstein: The Scientist and the Man.* April 13, 1979.

John R. Apel (NOAA Pacific Marine Environmental Lab) *Scientific Results From SEASAT.* April 6, 1979.

Gareth M. Green (Johns Hopkins Univ.) *Science and Technology in Environmental Medicine.* March 30, 1979.

Dennis J. Stanford (Smithsonian) *Evidence for the Earliest Man in North America.* March 23, 1979.

Ilya Prigogine (Univ. of Texas, Univ. of Brussells, and 1977 Nobel Prize for Chemistry) *From Determinism to Probability.* March 16, 1979.

H. T. Kung (Carnegie-Mellon Univ.) *Some Recent Advances in Computer Algorithms.* March 9, 1979.

Alphonse Chapanis (Johns Hopkins Univ.) *Interactive Communication – Some Findings From Laboratory Studies.* March 2, 1979.

Channing L. Ewing (Naval Aerospace Medical Research) *Human Response to Inertial Forces.* February 23, 1979.

Sergei Kitaigordorodskii (Johns Hopkins Univ.) *Some Aspects of the Wind Wave Spectrum.* February 16, 1979.

Paul B. MacCready (Aerovironment) *Man Powered Flight: The Gossamer Condor.* February 9, 1979.

Richard S. Alben (GE Research Lab) *Photovoltaic Electricity From Concentrated Sunlight.* February 2, 1979.

Lester Machta (NOAA Air Resources Laboratory) *The Carbon Dioxide Problem.* January 26, 1979.

Herbert Friedman (Naval Research Laboratory) *Neutron Stars, Black Holes, and the Shape of the Universe.* January 19, 1979.

Martin A. Tolcott (Office of Naval Research) *Decision Aids for Command and Control.* January 12, 1979.

Cody Pfanstiehl (Metro) *Update on Metro – The Public Transportation Revolution.* January 5, 1979.

W. Ross Adey (VA Loma Linda Hospital) *Brain Tissue Interactions With Weak Electromagnetic Fields.* December 8, 1978.

J. Imbrie (Brown Univ.) *Orbital Theory of the Ice Ages.* December 1, 1978.

Noel Vietmyer (National Academy of the Sciences) *Exploiting Unconventional Plants as Resources in the 1980s.* November 10, 1978.

Paul C. Lauterbur (SUNY Stony Brook, 2003 Nobel Prize for Physiology or Medicine) *Nuclear Magnetic Resonance Zeugmatographic Imaging: Applications in Medicine.* November 3, 1978.

W. J. Spencer (Sandia Laboratories) *An Electronic Pancreas for Diabetics.* October 27, 1978.

J. H. Simmons (Catholic Univ. of America) *Fixation of Radioactive Waste in High-Silica Glass.* October 20, 1978.

J. A. Krumhansl (National Science Foundation) *The Evaluation of Applied Theoretical Concepts for Nondestructive Evaluation.* October 13, 1978.

L Gleason (Marine Hydroelectric Development Corp.) *Opportunities and Problems of Hydroelectric Development at Existing Dams.* October 6, 1978.

1977 – 1978

T. A. Potemra (JHU/APL) *The Aurora Polaris: The Greatest Light Show on Earth.* September 29, 1978.

Birute Galdikas-Brindamour (L. S. B. Leakey Foundation) *Orangutans and Hominid Evolution.* June 16, 1978.

Stanley Corrsin (Johns Hopkins Univ.) *The Soaring Flight of Birds.* June 2, 1978.

R. E. Green (Johns Hopkins Univ.) *Some Innovative Techniques in Nondestructive Testing.* May 26, 1978.

L. Donley (Lamu Museum, Kenya) *The Role of a Museum in a Developing Country.* May 19, 1978.

J. Winger (Chase Manhattan Bank) *The Financial Realities of an Adequate Energy Supply.* May 12, 1978.

W. R. Powell (JHU/APL) *Capturing the Sun's Heat for Future Use.* May 5, 1978.

P. R. McHugh (Johns Hopkins Univ.) *The Control of the Ingestion of Calories in Feeding Behavior.* April 28, 1978.

F. A. Long (Cornell Univ.) *A Set of Questions on U.S. Military R&D: For What and How Much?* April 21, 1978.

C. R. Johnson (Univ. of Maryland) *The Impossibility of Group Decisions.* April 14, 1978.

R. Ramaty (NASA Goddard Space Flight Center) *Gamma Ray Lines in Astrophysics.* April 7, 1978.

P. Achinstein (Johns Hopkins Univ.) *Some Paradoxes of Confirmation in Science.* March 31, 1978.

J. W. Kendrick (George Washington Univ.) *Relationships Between R&D and Productivity/Economic Growth.* March 24, 1978.

Sam Koslov (Office of Assistant Secretary of the Navy) *Electromagnetic Radiation: Its Impact on Biology and on Technical Operations.* March 17, 1978.

V. Brannigan (Univ. of Maryland) *Converting Scientific Fact Into Legal Evidence.* March 10, 1978.

B. M. Zuckerman (Univ. of Maryland) *The Search for Extraterrestrial Intelligence.* March 3, 1978.

R. M. Hamilton (U.S. Geological Survey) *Earthquake Prediction.* February 24, 1978.

Robert R. Newton (JHU/APL) *The Crime of Claudius Ptolemy.* February 17, 1978.

W. M. Brown (Hudson Inst.) *Optimal Energy Paths.* February 10, 1978.

Ronald L. Rivest (Massachusetts Inst. of Technology) *A New Encryption Method.* February 3, 1978.

Victor L. Granatstein (Naval Research Laboratory) *Ultrahigh Power Microwave Pulses From Intense Relativistic Electron Beams.* January 27, 1978.

Edward R. Harrison (Univ. of Massachusetts) *Has the Sun a Companion Star?* January 6, 1978.

Jogish Pati (Univ. of Maryland) *Basic Left-Right Symmetry in Nature: Its Implication for Atomic Parity and Electron-Positron Colliding Experiments.* December 16, 1977.

Bruce Smith and Joseph Karlesky (Columbia Univ. and Franklin and Marshall College) *The State of Academic Science.* December 9, 1977.

Norman Augustine (Martin Marietta Corporation) *Projecting Future Defense Capabilities.* December 2, 1977.

Bennett Miller (U.S. Dept. of Energy) *The Role of Inexhaustible Energy Resources in Solving the Energy Crisis.* November 18, 1977.

Sidney M. Mintz (Johns Hopkins Univ.) *Sugar, Culture, and Power – An Anthropological View.* November 11, 1977.

David Adler (Massachusetts Inst. of Technology) *Amorphous Semiconductors.* November 4, 1977.

Maurice M. Shapiro (Harvard Univ.) *Hunting for Neutrinos Deep Under the Ocean.* October 28, 1977.

Helmut E. Landsberg (Univ. of Maryland) *Fluctuations of the Earth's Climate.* October 21, 1977.

Heinz Gerischer (Fritz Haber Institut) *Semiconductor Electrodes in the Electrochemical Conversion of Solar Energy.* October 14, 1977.

Kishin Moorjani (JHU/APL) *Disordered Magnetism.* October 7, 1977.

1976 – 1977

Mark Goldberger (Maryland Dept. of Health and Mental Hygiene) *Tracking Down Legionnaires' Disease.* May 27, 1977.

James Weiss (Johns Hopkins Univ.) *Some New Uses of Ultrasound in Cardiology.* May 20, 1977.

J. Imbrie (Brown Univ.) *Orbital Theory of the Ice Ages.* May 13, 1977.

James R. Heirtzler (Woods Hole Oceanographic Inst.) *Exploration of Mid-Ocean Ridges by Submersibles.* May 6, 1977.

John R. Carruthers (Bell Telephone Laboratories) *Optical Fiber Guides for Lightwave Communication.* April 29, 1977.

Vernon B. Mountcastle (Johns Hopkins Univ.) *Brain Mechanisms for Visual Attention.* April 15, 1977.

Farah Usmani (United Nations Environmental Program) *Energy Options for Developing Countries.* April 8, 1977.

I. B. C. Matheson (Univ. of Georgia) *The Role of Active Oxygen in Biological Oxidations.* April 1, 1977.

Alex Dragt (Univ. of Maryland) *Chaos Starting From F = ma.* March 25, 1977.

E. G. D. Cohen (Rockefeller Univ.) *The Quest for the Absolute Zero of Temperature.* March 18, 1977.

Colin Crook (Motorola Semiconductor Products) *Future Microcomputers and Technologies: A Perspective.* March 11, 1977.

Roberto Poljak (Johns Hopkins Univ.) *Structure and Function of Immunoglobulins.* March 4, 1977.

R. M. May (Princeton Univ.) *Simple Ecological Models With Very Complicated Dynamics.* February 25, 1977.

Abel Wolman (Johns Hopkins Univ.) *Solid Waste Disposal.* February 18, 1977.

Eric Baer (Case Western Reserve Univ.) *Tendon Structure and Aging.* February 11, 1977.

Robert Zwanzig (Univ. of Maryland) *Molecular Motion in Liquids.* February 4, 1977.

John D. Morgan (U.S. Bureau of Mines) *The U.S. Mineral Position.* January 28, 1977.

Otto Scherer (Hydronautics Incorporated) *An Overview of Sailing Yacht Propulsion.* January 21, 1977.

Joseph Sucher (Univ. of Maryland) *What Is the World Made Of?* January 14, 1977.

William Levendahl (Naval Ship Research and Development Center) *Superconductive Naval Propulsion Systems.* January 7, 1977.

Edward Blum (Energy Research and Development Agency) *Catastrophy Theory and Some Potential Applications.* December 17, 1976.

P. A. Hanle (National Air and Space Museum) *The Coming of Age of Erwin Schroedinger: His Quantum Statistics of Ideal Gases.* December 10, 1976.

J. M. D. Coey (Univ. of Grenoble) *Novel Magnetic Structures in Amorphous Solids.* December 3, 1976.

Maxine Singer (National Institutes of Health) *The Scientific and Social Issues Raised by Recombinant DNA Research.* November 12, 1976.

Harry L. Swinney (City Univ. of New York) *Transition to Turbulence in a Rotating Fluid.* November 5, 1976.

Douglas Davis (Georgia Inst. of Technology) *Atmospheric Measurements of Trace Gases via Aircraft.* October 29, 1976.

Jordan Lewis (National Bureau of Standards) *Technology, Economics, and Public Policy.* October 22, 1976.

Robert Long (Johns Hopkins Univ.) *Circulations and Salt Distributions in Estuaries.* October 15, 1976.

J. G. Mavroides (Lincoln Laboratory) *Photoelectrolysis of Water.* October 8, 1976.

Robert E. Fischell (JHU/APL) *Pain Relief by Electrostimulation.* October 1, 1976.

1975 – 1976

R. E. Gibson (JHU/APL) *Reflections on the Origin and Development of APL.* June 4, 1976.

C. W. Misner (Univ. of Maryland) *Black Holes and Spacetime Curvatures.* May 14, 1976.

Leon Madansky (Johns Hopkins Univ.) *New Particles.* May 7, 1976.

Paul Leventhal (Senate Government Operations Committee) *Nuclear Proliferation.* April 30, 1976.

David Harrje (Princeton Univ.) *Energy Conservation in the Home.* April 23, 1976.

John Cooney (Drexel Univ.) *Applications of Raman Scattering to Remote Sensing.* April 16, 1976.

Paul Bosco (Georgetown Univ.) *Linguistic Models in Second Language Instruction.* April 9, 1976.

J. H. Olsen (Flow Research Inc.) *Cutting With High Speed Water Jets.* April 2, 1976.

Walter G. Berl (JHU/APL) *Research on Fire Related Problems.* March 26, 1976.

S. Fred Singer (Univ. of Virginia) *SSTs, Ozone, and Skin Cancer.* March 19, 1976.

Ruth Patrick (Academy of Natural Sciences) *Ecological Effects of Various Energy Sources.* March 12, 1976.

Theodore Tamir (Polytechnic Inst. of New York) *Beam and Waveguide Couplers.* March 5, 1976.

Donald W. Simborg (Johns Hopkins Univ.) *Patient Information Systems – The Johns Hopkins Experience.* February 27, 1976.

Alan Fowler (IBM Watson Research Center) *Inversion Layers on Silicon Surfaces.* February 13, 1976.

Allan R. Hoffman (Senate Committee for Commerce) *A Scientist Joins the Congressional Staff.* February 6, 1976.

Arthur Squires (City Univ. of New York) *Coal – A Past and Future King.* January 30, 1976.

Paul Handler (Univ. of Illinois) *Computer Predictions of Energy Atmospheric Effects.* January 23, 1976.

Howard A. Glickstein (Howard Univ.) *Title VII – Ten Years Later.* January 16, 1976.

Robert Park (Univ. of Maryland) *Low Energy Electrons as a Probe of a Solid Surface.* January 9, 1976.

Shyke A. Goldstein (Univ. of Maryland and Naval Research Laboratory) *Intense Electron and Ion Beams.* December 18, 1975.

Arthur E. Hess (Consultant, Social Security Administration) *Social Security – Past, Present, and Future.* December 12, 1975.

E. Bright Wilson (Harvard Univ.) *Coping With the Secondary Consequences of New Technology.* November 21, 1975.

Michael Beer (Johns Hopkins Univ.) *Studies of Macromolecular Structure With the Scanning Electron Microscope.* November 7, 1975.

George Clark (MIT Center for Space Research) *X-Rays From Gravitationally Collapsed Bodies Observed by SAS-C.* October 31, 1975.

Virginia L. Trimble (Univ. of Maryland, College Park) *Cosmology – Man's Place in the Universe.* October 24, 1975.

Oswald Roels (Columbia Univ.) *Artificial Upwelling: Power, Fresh Water, and Food From Deep Water and Sunshine.* October 17, 1975.

M. C. Waddell (JHU/APL) *Vehicle Management in Automatic Rapid Transit.* October 10, 1975.

George M. Temmer (Rutgers Univ.) *What We Can Learn About Very Short Time Intervals (~ 1e-18 S) by the Crystal Blocking Technique.* October 3, 1975.

1974 – 1975

Helen Hopfield (JHU/APL) *Tropospheric Effects on Satellite Range Measurements.* May 23, 1975.

Alfred J. Cote (JHU/APL) *Harbor Traffic Safety.* May 16, 1975.

Steven M. Stanley (Johns Hopkins Univ.) *The Pattern and Process of Large-Scale Evolution.* May 9, 1975.

Eugenie Clark (Univ. of Maryland) *Mexican "Sleeping" Sharks.* April 25, 1975.

Bernd T. Matthias (Univ. of California, San Diego) *Different Approaches to High Temperature Superconductivity.* April 18, 1975.

Paul E. Garber (Smithsonian Institution) *Kites and Boomerangs.* April 4, 1975.

Irwin Schneider (Naval Research Laboratory) *Holography Using Anisotropic Centers in Alkali Halides.* March 28, 1975.

Roy R. Johnson (KMS Fusion Inc) *Laser Driven Compression Experiments and Their Implication for Laser Pellet Fusion.* March 21, 1975.

Hong-Yee Chiu (Goddard Inst. for Space Studies) *Problems of Intense Magnetic Fields in Astrophysics.* March 14, 1975.

Earl Callen (American Univ.) *Phase Transitions in Social Systems.* March 7, 1975.

Gerald K. O'Neill (Princeton Univ.) *The Colonization of Space.* February 21, 1975.

Wernher Von Braun (Fairchild Industries) *Communications Satellites – Space Science Turns to the Needs of Man.* February 14, 1975.

C. F. Christ (Johns Hopkins Univ.) *How to Create or Control Inflation.* February 7, 1975.

Verner Suomi (Univ. of Wisconsin) *Mariner 10 Encounters Venus and Mercury.* January 31, 1975.

Kenneth E. Iverson (IBM) *APL for APL.* January 17, 1975.

Frank Wallach (United Automobile Workers of America) *Occupational Health and Safety.* January 10, 1975.

N. C. Rasmussen (Massachusetts Inst. of Technology) *Nuclear Reactor Safety.* January 3, 1975.

H. E. Stanley (Massachusetts Inst. of Technology) *How Does an Ion Get Through a Membrane?* December 20, 1974.

H. B. Callen (Univ. of Pennsylvania) *The Physics of Magnetic Bubbles.* December 13, 1974.

D. Bryceson (Univ. of Oxford) *Research on National Parks and the Serengeti.* December 6, 1974.

M. Harvey Brenner (Johns Hopkins Univ.) *Special Problems Associated With National Economic Instability.* November 22, 1974.

Merrill Hessel (National Bureau of Standards) *Heat Pipe Ovens and Applications to High Energy Lasers.* November 15, 1974.

B. R. Stokes (American Public Transit Association) *Some Problems With Mass Transit.* November 8, 1974.

K. W. Boer (Univ. of Delaware) *Results From the Experimental Solar House (Solar I).* October 31, 1974.

J. F. Stocky (Jet Propulsion Laboratory) *Reducing Automobile Emission Through Enrichment of Gasoline.* October 18, 1974.

C. A. Ponnamperuma (Univ. of Maryland) *A Chemical Origin of Life.* October 11, 1974.

Gabor Domokos (Johns Hopkins Univ.) *Resonances, Partons, and Scaling: A Theorist Reviews Some Recent Experiments.* October 4, 1974.

1973 – 1974

A. W. Trivelpiece (U.S. Atomic Energy Commission) *Progress Toward Controlled Thermonuclear Fusion.* June 21, 1974.

Frank Satkiewicz (JHU/APL) *Mass Spectrometry of Solids.* May 31, 1974.

Robert S. Ledley (Georgetown Univ. Medical Center) *A Computer Assisted Tomographic X-Ray Scanner.* May 10, 1974.

R. N. Silver (Los Alamos Scientific Laboratories) *Electron Hole Condensation in Semiconductors.* May 3, 1974.

Harold Masursky (U.S. Geological Survey) *Exploration of Mars.* April 26, 1974.

Nicolaas G. van Kampen (Univ. of Utrecht) *Nonlinear Transfer Equations.* April 19, 1974.

Amar Bose (Massachusetts Inst. of Technology) *Recording and Reproduction of Music.* April 12, 1974.

Theodore B. Taylor (International Research and Development Corporation) *Nuclear Theft – Risks and Safeguards.* March 29, 1974.

Roberto Poljak (Johns Hopkins Univ.) *Three Dimensional Structure of Human Immunoglobulin.* March 22, 1974.

David J. Rose, Warren A. Roberts, and John W. Wilson (MIT, Phillips Petroleum, and Energy Consultant) *Panel Discussion: Oil Resources and Energy Policy.* March 14, 1974.

K. C. Hoffman (Brookhaven National Laboratory) *Hydrogen Energy Systems – Near and Long Term Prospects.* March 8, 1974.

J. F. Bell (Johns Hopkins Univ.) *A Modern Perspective on 18th and 19th Century Experiments in the Physics of Solids.* March 1, 1974.

S. P. Maran (NASA Goddard Space Flight Center) *Comet Kahoutek in Retrospective.* February 22, 1974.

E. W. Montroll (Univ. of Rochester) *Energy Transport in Photosynthetic Units.* February 15, 1974.

James Van Allen (JHU/APL and Univ. of Iowa) *The Pioneer 10 Encounters Jupiter.* February 8, 1974.

Owen M. Phillips (Johns Hopkins Univ.) *Breaking Waves and Ocean White Caps.* February 1, 1974.

D. M. Gilford (National Academy of Sciences) *Can a Statistician Influence Policy in American Education?* January 25, 1974.

P. O. Clark (Hughes Research Labs) *Recent Developments in Laser Technology.* January 18, 1974.

H. D. Mills (IBM Federal Systems) *Math as Structured Programming or How to Cut the Gordian Knot.* January 11, 1974.

Irving S. Cooper (St. Barnabas Hospital) *The Present and Potential Use of a Brain Pacemaker.* December 21, 1973.

K. B. Lewis (Johns Hopkins Univ.) *The Nature of Heart Disease.* December 14, 1973.

Donn B. Parker (Control Data Corp.) *Computer Abuse.* December 7, 1973.

E. S. Starkman (General Motors Corp. and Univ. of California) *The Automobile and the Environment in an Era of Conflicting Demands.* November 30, 1973.

A. D. Moore (Univ. of Michigan) *Electrostatics in Action.* November 16, 1973.

Christopher H. Scholz (Columbia Univ.) *The Physics of Earthquakes and Earthquake Prediction.* November 9, 1973.

A. F. Aveni (Colgate Univ. and Univ. of South Florida) *Astronomy and City Planning in Ancient Mexico.* November 2, 1973.

G. E. Smith (Bell Telephone Laboratories) *An Overview of Charge Coupled Devices.* October 26, 1973.

T. S. Huang (Purdue Univ.) *Image Enhancement by Computer.* October 19, 1973.

T. O. Poehler (JHU/APL) *High Temperature Superconductivity?* October 12, 1973.

1972 – 1973

Robert E. Fischell (JHU/APL) *A Rechargeable Heart Pacemaker: Evolution of a 'Better Mouse Trap.'* May 25, 1973.

Carl E. Fichtel (NASA Goddard Space Flight Center) *Gamma-Ray Astronomy From SAS-2.* May 18, 1973.

Abraham J. Sachs (Brown Univ.) *Deciphering Babylonian Astronomy.* May 11, 1973.

W. A. Fisher (U.S. Geological Survey) *Earth Resources From Satellites: ERTS and EROS.* May 4, 1973.

Betty Vetter (Scientific Manpower Commission) *How Many Engineers (Or Scientists) Are Enough?* April 27, 1973.

S. I. Rasool (National Aeronautics and Space Administration) *Atmospheres of Mars, Venus, and Earth - A Problem in Atmospheric Evolution.* April 20, 1973.

Peter Parker (Yale Univ.) *The Solar Neutrino Puzzle.* April 6, 1973.

S. Fred Singer (Univ. of Virginia) *When Does Growth Become Too Expensive?* March 23, 1973.

Julian Stanley (Johns Hopkins Univ.) *Mathematically Precocious Youngsters.* March 16, 1973.

Joseph Weber (Univ. of Maryland) *The Gravitational Radiation Experiment.* March 9, 1973.

Estelle Ramey (Georgetown Univ.) *Sex Differences From the Physiological Point of View: Facts and Fiction.* February 23, 1973.

D. J. Williams (NOAA) *Impact of Space Disturbances on Man's Immediate Environment.* February 16, 1973.

Arnall Patz (JHU School of Medicine) *Photocoagulation With a Special-Purpose Laser.* February 9, 1973.

H. F. Harmuth (The Catholic Univ. of America) *Survey of R&D in the Field of Walsh Functions.* February 2, 1973.

M. L. Hill (JHU/APL) *Use of Atmospheric Electricity for Aircraft Stabilization.* January 26, 1973.

R. C. Elton (Naval Research Laboratory) *Recent Developments in X-Ray Lasers at NRL.* January 19, 1973.

M. H. Cohen (Univ. of Chicago) *Control of Biological Development in a Simple Living Organism.* January 12, 1973.

D. W. Pritchard (Johns Hopkins Univ.) *The Effect of Hurricane Agnes on the Chesapeake Bay.* December 15, 1972.

G. H. Brown (Kent State Univ.) *The Properties and Structure of Liquid Crystals.* December 8, 1972.

Carrol M. Williams (Harvard Univ.) *New Approaches to the Selective Control of Insect Pests.* December 1, 1972.

J. Tuzo Wilson (Univ. of Toronto) *The Physical Study of Earth and the Scientific Revolution It Has Caused.* November 17, 1972.

Oskar Morgenstern (New York Univ.) *A Cost/Benefit Analysis of the Space Shuttle.* November 10, 1972.

Robert Ardrey (Author) *The Biology of Behavior.* November 3, 1972.

C. K. Jen (JHU/APL) *My Impressions of Science and Technology in China.* October 27, 1972.

Max V. Mathews (Bell Telephone Laboratories) *Computer Music and Other Unusual Computer Applications.* October 20, 1972.

Robert E. Fischell (JHU/APL) *Triad – A 4-Ounce Satellite in a 200 Pound Box.* October 13, 1972.

John H. Nuckolls and Lowell Wood (Lawrence Livermore Laboratory) *Laser Fusion.* October 6, 1972.

1971 – 1972

M. Olson (Univ. of Maryland) *The National Income and the Quality of Life.* June 2, 1972.

Alexander Marshack (Harvard Univ.) *Early Ice-Ace Intelligence as Revealed by Notation and Art.* May 19, 1972.

Joseph Smogarinsky (NOAA Geophysical Fluid Dynamics Laboratory) *The Global Atmospheric Circulation.* May 5, 1972.

Theodor Hansch (Stanford Univ., 2005 Nobel Prize for Physics) *Saturation Spectroscopy With Tunable Dye Lasers.* April 28, 1972.

Richard A. Farrell (JHU/APL) *Transparency and Structure of the Cornea.* April 21, 1972.

Remo Ruffini (Princeton Univ.) *Black Holes in Our Galaxy.* April 14, 1972.

W. K. Hartmann (Illinois Inst. of Technology) *Early Cratering History of the Solar System.* April 7, 1972.

Roger F. Naill (Massachusetts Inst. of Technology) *A Systems Dynamics Study of Nonrenewable Natural Resources.* March 31, 1972.

Leo P. Kadanoff (Brown Univ.) *Uses and Misuses of Urban Growth Models.* March 24, 1972.

Clifford S. Russell, Walter O. Spofford, and Robert A. Kelly (Resources of the Future) *Regional Environmental Quality Monitoring.* March 17, 1972.

R. Langridge (Princeton Univ.) *Interactive Computer Graphics in Molecular Biology.* March 10, 1972.

Harold Schonhorn (Bell Telephone Laboratories) *Surface Chemistry and Practical Adhesion.* February 25, 1972.

Samuel Rosen (Mt. Sinai Hospital Medical School) *A Physician's Report on His Visit to China.* February 18, 1972.

Jesse W. Beams (Univ. of Virginia) *The Measurement of the Gravitational Constant.* February 11, 1972.

Armand H. Delsemme (Univ. of Toledo) *Our Understanding of the Cometary Phenomena.* February 4, 1972.

M. Gordon Wolman (Johns Hopkins Univ.) *Is the World Livable?* January 28, 1972.

William Sladen (Johns Hopkins Univ.) *Adélie Penguins and Whistling Swans: A Study of Gregarious Individuals.* January 14, 1972.

C. Kumar N. Patel (Bell Telephone Laboratories) *Tunable Raman Lasers.* January 7, 1972.

Timothy Williams and Janet Williams (State Univ. of New York) *Tracking Radar Studies of Bird Migrations.* December 17, 1971.

Donald Mitz (NASA Headquarters) *NASA's Planetary Program.* December 10, 1971.

S. Fred Singer (Univ. of Virginia) *Is There an Optimum Level of Population?* December 3, 1971.

James S. Coleman (Johns Hopkins Univ.) *Entry of the Young Into Adult Society.* November 19, 1971.

Milton Moon (JHU/APL) *Some Alternatives for Air Traffic Control.* November 12, 1971.

Stuart W. Churchill (Univ. of Pennsylvania) *Choosing Between Theory and Experiment.* November 5, 1971.

John C. Kohl (Commissioner of Transportation of New Jersey) *Urban Transit and Institutional Inertia.* October 29, 1971.

Henry M. Seidel (Johns Hopkins Univ.) *The 'Overselling' of the Physician.* October 22, 1971.

Louis S. B. Leakey (Center for Prehistory and Paleontology) *Man: Past, Present – Future?* October 8, 1971.

1970 – 1971

R. Conrad (Medical Research Council) *Why We Talk to Ourselves When We Read.* May 21, 1971.

David Rabenhorst (JHU/APL) *The Superflywheel.* May 14, 1971.

John Calhoun and Leonard Olson (National Inst. of Mental Health) *Social Physics of Experimental Animal Populations.* May 7, 1971.

George F. Pieper (NASA Goddard Space Flight Center) *Priorities for Space Research in the 1970s.* April 30, 1971.

Herbert Gursky (Naval Research Laboratory) *X-Ray Astronomical Observations From SAS-A.* April 16, 1971.

Athelstan F. Spilhaus (American Association for the Advancement of Science) *Toward a Steady World.* April 9, 1971.

Albert Owens (Johns Hopkins Univ.) *Acute Leukemia: Investigative Challenges.* April 2, 1971.

Leon M. Lederman (Columbia Univ., 1988 Nobel Prize for Physics) *Elementary Particles: Speculation and Fantasy.* March 26, 1971.

Alexander M. Letov (Inst. for Control Problems) *A Survey of Soviet Spacecraft.* March 22, 1971.

Max Singer (Hudson Inst.) *Drug Abuse Policy.* March 12, 1971.

P. K. Tien (Bell Telephone Laboratories) *Light Waves in Thin Films and Integrated Micro-Optics.* February 19, 1971.

M. S. Eisenhower (Johns Hopkins Univ.) *To Insure Domestic Tranquility.* February 12, 1971.

Joseph Weber (Univ. of Maryland, College Park) *The Gravitational Radiation Experiment.* February 5, 1971.

David M. Gates (Washington Univ. and Missouri Botanical Gardens) *Energy Exchange With the Environment of Plants and Animals.* January 29, 1971.

Norman A. Blum (JHU/APL) *The Mossbauer Effect in High Magnetic Fields.* January 22, 1971.

Tsu Kai Chu (Princeton Univ.) *Feedback and Dynamic Control of Plasma Instabilities.* January 15, 1971.

Maurice M. Shapiro (Naval Research Laboratory) *Galactic Confinement of Cosmic Rays.* January 8, 1971.

Chung-ming Wong (U.S. Dept. of Interior) *Environmental Survival: A New Challenge for Engineers and Scientists.* December 18, 1970.

Charles Blake (Federal Aviation Administration) *SST Program Rationale and Status.* December 11, 1970.

Robert H. Cannon (U.S. Dept. of Transportation) *Some Advanced Transportation Programs.* December 4, 1970.

Joseph Schiebel (Georgetown Univ.) *The Soviet Scientist and Dissent.* November 27, 1970.

Morton B. Panish (Bell Telephone Laboratories) *The Evolution of a Room-Temperature CW Junction Laser.* November 20, 1970.

Lewis T. Claiborne (Texas Instrument Company) *Application of Ultrasonic Surface Waves to Signal Processing.* November 13, 1970.

Arthur Squires (City Univ. of New York) *Clean Power From Coal.* October 30, 1970.

Walter Elsasser (Univ. of Maryland) *Solid Geophysics: From Sea Floor Spreading to Mountain Building.* October 16, 1970.

Lauren Rueger (JHU/APL) *Time and Frequency Standardization.* October 9, 1970.

1969 – 1970

Robert A. Makofski (JHU/APL) *Technical and Economic Evaluation of Urban Transportation Systems.* May 15, 1970.

J. Murray Mitchell (ESSA Research Laboratories) *Air Pollution and Global Climatic Change.* May 8, 1970.

Thomas Collins (National Accelerator Laboratory) *The Present Status and Future Plans of the National Accelerator Laboratory (N.A.L.).* May 1, 1970.

Stanislaw Ulam (Univ. of Colorado) *Some Unusual Uses of Computers and Computing.* April 24, 1970.

Irwin Shapiro (Massachusetts Inst. of Technology) *Radio and Radar Tests of General Relativity.* April 17, 1970.

Joseph Tydings (Senate) *Crime, Judicial Reform, and Urban Problems.* April 10, 1970.

William Paddock (Tropical Agriculture Development) *How Green Is the 'Green' Revolution?* April 3, 1970.

Hannes Alfvén (Univ. of California San Diego, 1970 Nobel Prize for Physics) *Mission to an Asteroid.* March 26, 1970.

Leo Goldberg (Harvard Univ.) *Maser Effects in the Interstellar Medium.* March 20, 1970.

L. Eugene Cronin (Univ. of Maryland) *The Chesapeake at Bay.* March 13, 1970.

Robert R. Stromberg (National Bureau of Standards) *Polywater.* March 6, 1970.

Robert H. Kargon (Johns Hopkins Univ.) *Science's Public Malaise.* February 27, 1970.

Terrill A. Cool (Cornell Univ.) *Continuous-Wave All-Chemical Lasers.* February 20, 1970.

M. King Hubbert (U.S. Geological Survey) *Physical Constraints in the Evolution of an Industrial Culture.* February 13, 1970.

R. E. Rosensweig (Ferrofluidics Corporation) *Magnetic Fluid Technology.* February 6, 1970.

Simon Foner (MIT Lincoln Laboratory) *High Field Magnetism and Some Applications.* January 30, 1970.

M. Liebenberg (Dept. of Commerce) *The Office of Business Economics (O.B.E.) Quarterly Econometric Model of the U.S. Economy.* January 23, 1970.

A. F. Haught (United Aircraft Research Laboratories) *Laser Produced Plasmas.* January 16, 1970.

Albert Crewe (Univ. of Chicago) *High-Resolution Scanning Electron Microscopy.* December 12, 1969.

R. C. Powell (U.S. Coast Guard) *The Tanker Manhattan Through the Northwest Passage.* December 5, 1969.

Samuel E. Clements (Dept. of Defense) *Department of Defense R&D Policy.* November 21, 1969.

Stephen P. Maran (National Aeronautics and Space Administration) *Pulsars and the Crab Nebula.* November 14, 1969.

Carroll Alley (Univ. of Maryland) *The Apollo 11 Laser Ranging Retro-Reflection Experiment.* November 7, 1969.

Lawrence Goldmuntz (U.S. Dept. of Transportation) *A Proposed Solution for Air Traffic Control.* October 31, 1969.

Derrick Scovil (Bell Telephone Laboratories) *Magnetic Bubbles.* October 24, 1969.

Edward C. T. Chao (U.S. Geological Survey) *Preliminary Results of Apollo 11 Lunar Samples.* October 17, 1969.

Edward C. Smith (American Univ. and JHU/APL) *Urban Tribalization in Washington DC: A Study of Invisible Political Power.* October 10, 1969.

1968 – 1969

E. S. Starkman (Univ. of California Berkeley) *Control of Vehicular Emissions: Methods and Limitations.* May 29, 1969.

Margaret Mead (American Museum of Natural History) *Cultural Factors and Population Control.* May 23, 1969.

Woodrow Seamone (JHU/APL) *The Man-Machine Interface in the Use of Artificial Hands.* May 16, 1969.

Peter G. Fielding (Booz Allen Research) *The Status of Surface-Effect Vehicles.* May 9, 1969.

Raymond J. Seeger (National Science Foundation) *Nature, Art, and Mathematics.* May 2, 1969.

John S. Rinehart (ESSA Research Laboratories) *Why Geysers Are Faithful.* April 25, 1969.

Louis Flexner (Univ. of Pennsylvania) *Memory.* April 18, 1969.

Martin A. Uman (Westinghouse Research and Development) *Lightning.* April 11, 1969.

Hellmut Fritzsche (Univ. of Chicago) *Amorphous Semiconductors, New Physics, and a New Technology.* March 28, 1969.

Harold Hoekstra (Federal Aviation Administration) *Hijacking.* March 21, 1969.

Ernest Stern (Massachusetts Inst. of Technology) *Progress Report on Micro-Sound Technology.* March 14, 1969.

Reid A. Bryson (Univ. of Wisconsin Center for Climatic Research) *Effects of Atmospheric Pollution on Climate.* March 7, 1969.

J. Lamar Worzel (Columbia Univ. Lamont Geological Observatory) *Are the Continents Drifting?* February 28, 1969.

William S. Albright (Johns Hopkins Univ.) *How One Reconstructs an Ancient Civilization.* February 14, 1969.

C. A. Doxiadis (Doxiadis Associates, Athens, Greece) *An Open-Ended Discussion on Human Settlements.* February 7, 1969.

John L. Colp (Sandia Laboratories) *Terradynamics.* January 31, 1969.

Anthony J. DeMaria (United Aircraft Research Laboratories) *Ultra-Short Laser Pulses.* January 24, 1969.

Frank White (Aviation Transport Association) *Airborne Collision-Avoidance Technology.* January 17, 1969.

John P. Craven (Dept. of the Navy) *Design of Small Submersibles.* January 10, 1969.

John B. Garrison, D. G. Grant, M. M. Hart, and Woodrow Seamone (JHU/APL) *Topics Selected From APL's Medical Engineering Activities.* December 13, 1968.

Philip Abelson (Carnegie Geophysical Laboratory) *Science and Politics 1969; The Road Bends Sharply.* December 6, 1968.

Peter H. Rossi (Johns Hopkins Univ.) *Civil Disorders and the Politics of Discontent.* November 22, 1968.

S. Fred Singer (U.S. Dept. of Interior) *Origin of the Moon and Geophysical Consequences.* November 15, 1968.

L. M. Murphy (Environmental Science Service Administration) *The Mechanisms of Earthquakes.* November 8, 1968.

Abraham Robinson (Yale Univ.) *The Rebirth of the Infinitesimal.* November 1, 1968.

Daniel B. DeBra (Stanford Univ.) *Theory and Experiments With Drag-Free Satellites.* October 25, 1968.

Roy Britton (Carnegie Inst. of Technology) *Repeating DNA Sequences and Evolution.* October 18, 1968.

William Avery (JHU/APL) *An Integrated Urban-Interurban Transportation Concept.* October 11, 1968.

1967 – 1968

Isadore Katz (JHU/APL) *Clear-Air Turbulence.* May 10, 1968.

M. Danos (National Bureau of Standards) *Whither Nuclear Physics?* May 3, 1968.

Howard R. Penniman (Georgetown Univ.) *The Proposed New Maryland Constitution.* April 30, 1968.

Theodore O. Poehler and Robert Turner (JHU/APL) *Far-Infrared Lasers and Their Application.* April 26, 1968.

John A. O'Keefe (NASA Goddard Space Flight Center) *Surveyor and Other New Results on the Lunar Surface.* April 19, 1968.

Abel Wolman (Johns Hopkins Univ.) *Problems of the Environment.* April 12, 1968.

Emmett N. Leith (Univ. of Michigan) *Modern Holography.* April 5, 1968.

Benjamin Widom (Cornell Univ.) *Phase Transitions and Critical Phenomena.* March 29, 1968.

Fred Friendly (Columbia Univ. and Ford Foundation) *The Use of Satellites for Educational Television.* March 22, 1968.

Harold Sobol (RCA Laboratories) *Integrated Circuitry for Microwaves.* March 15, 1968.

Sterling A. Colgate (New Mexico Inst. for Mining and Technology) *Supernova Interpretation of Quasars.* March 8, 1968.

K. Kurokawa (Bell Telephone Laboratories) *Applying the Gunn Effect to High-Speed Devices.* March 1, 1968.

Clarence M. Fowler (Los Alamos Scientific Laboratory) *Explosive Production of Multi-Megagauss Fields and Their Application.* February 16, 1968.

Alan H. Barrett (Massachusetts Inst. of Technology) *The Puzzling Radio Signals From Interstellar Hydroxyl Radicals.* February 2, 1968.

Robert C. Wood (Dept .of Housing and Urban Development) *The Use of Technology for Solving Urban Problems.* January 26, 1968.

Richard J. Johns (Johns Hopkins Univ.) *Biomedical Engineering From Different Viewpoints.* January 19, 1968.

Edward W. Ungar (Battelle Memorial Institute) *Ablation Cooling.* January 12, 1968.

Nicholaas Bloembergen (Harvard Univ., 1981 Nobel Prize for Physics) *Stimulated Raman Effect.* January 5, 1968.

Dame Kathleen Lonsdale (Univ. College of London) *Aging of Matter and Man.* December 15, 1967.

Joseph Kirkpatrick (Honeywell Corporation) *The Laser Gyro.* December 8, 1967.

Nicolaas G. van Kampen (Univ. of Utrecht and Howard Univ.) *Does a Moving Body Appear Cool?* December 1, 1967.

Leonard Mandel (Univ. of Rochester) *Interference of Independent Photon Beams.* November 17, 1967.

William D. Carey (Bureau of Budget) *Informal Talk About Science Budgeting.* November 10, 1967.

Curt P. Richter (Johns Hopkins Univ.) *The 24 Hour Clock in Animals and Man.* November 3, 1967.

Gerald Feinberg (Columbia Univ.) *The Possibility of Faster-Than-Light Particles.* October 27, 1967.

D. McRuer (Systems Technology Inc.) *The Human Being as a Control Element.* October 20, 1967.

Robert R. Newton (JHU/APL) *Why the Earth Is Slowing Down.* October 13, 1967.

1966 – 1967

Richard B. Kershner (JHU/APL) *On Paving the Plane.* May 19, 1967.

John Mackenzie (Rensselaer Polytechnic Inst.) *Electronically Conducting Glasses.* May 12, 1967.

Herman Kahn (Hudson Institute) *The Next Thirty-Three Years.* May 5, 1967.

William Feldman (Eastman Kodak Corporation) *The Photographic System of the Lunar Orbiter.* April 28, 1967.

Luigi Jacchia (Smithsonian Astrophysical Observatory) *Structure and Variations of the Upper Atmosphere.* April 21, 1967.

William Parker (Univ. of Pennsylvania) *Measurement of 2e/h Using the AC Josephson Effect, and Its Implications for Knowledge of the Fundamental Physical Constants.* April 14, 1967.

R. B. Partridge (Princeton Univ.) *The Cosmic Background Radiation and the Primeval Fireball.* April 7, 1967.

Allen B. Holmes (Harry Diamond Laboratory) *Fluidic Missile Control.* March 31, 1967.

Michael J. Salkind (United Aircraft Corporation Research Laboratory) *Whiskers and Fibers.* March 24, 1967.

Lester S. Eastman (Cornell Univ.) *The Gunn Effect – Status and Prospects.* March 17, 1967.

G. Sargent James (Avco-Everett Research Laboratories) *The Trapping and Acceleration of Ions in Electron Plasmas.* March 10, 1967.

William Happ (NASA Electronics Research Center) *The Use of Computers in Designing Electronic Circuits.* March 3, 1967.

H. I. Forman (Rohm & Haas Co.) *Government Patent Policy – Yesterday, Today, and Tomorrow.* February 24, 1967.

William B. Kouwenhoven (JHU) *Effects of Electric Shock on the Human Body.* January 20, 1967.

I. M. Rubin (Massachusetts Inst. of Technology) *Factors in the Performance of R&D Projects.* January 13, 1967.

L. J. Cutrona (Univ. of Michigan and Conductron Corp.) *Electro-Optical Data Processing.* December 16, 1966.

Anne Roe (Harvard Univ.) *The Creative Life Patterns in Scientists and Artists.* November 18, 1966.

F. Phillip Bowden (Cambridge Univ.) *Molecularly Flat Surfaces.* November 11, 1966.

Karl F. Herzfeld (Catholic Univ. of America) *Newton's 'Laws' – Laws or Definitions?* October 28, 1966.

Herman Z. Cummins (Johns Hopkins Univ.) *Ultrahigh-Resolution Laser Techniques.* October 21, 1966.

Gerald V. Bull (McGill Univ.) *Gun-Launched Satellites.* October 14, 1966.

Robert M. Fristrom (JHU/APL) *Molecular Beam – A Tool for Chemical Research.* October 7, 1966.

1965 – 1966

Robert E. Fischell (JHU/APL) *Spacecraft Attitude-Control Systems.* May 13, 1966.

Daniel S. Greenberg (Science Magazine) *Science and Politics.* May 6, 1966.

Louis Rosen (Los Alamos Scientific Laboratories) *Meson Factories.* April 29, 1966.

Stuart E. Miller (Bell Telephone Laboratories) *Optical Transmission Systems.* April 22, 1966.

Richard Courant (New York Univ.) *On Numerical Analysis of the Equations of Mathematical Physics.* April 15, 1966.

William B. Brower (Rensselaer Polytechnic Inst.) *High-Speed Ground Transport Through Flight in Nonevacuated Tubes.* April 8, 1966.

Robert G. Sachs (Argonne National Laboratory and Univ. of Chicago) *The Concept of Time-Reversal Invariance in Physics.* March 30, 1966.

Melvin Lax (Bell Telephone Laboratories) *Noise in Laser Oscillators.* March 25, 1966.

Robert Frosch (Advanced Research Projects Administration) *Seismic Arrays.* March 11, 1966.

L. S. Kubie (Sheppard-Pratt Hospital) *Blocks to Creativity.* March 4, 1966.

Hong-Yee Chiu (Goddard Inst. of Space Studies) *Astrophysical Evidence for the Direct Electron-Neutrino Interaction.* February 25, 1966.

Oskar Klein (Univ. of Stockholm and Brandeis Univ.) *On the Origin of Our Local System of Galaxies.* February 18, 1966.

William H. Huggins (Johns Hopkins Univ.) *Computerized Animation for Educational Films.* February 11, 1966.

Edward Mason (Univ. of Maryland) *Oscillating Instabilities in Diffusing Gases.* February 4, 1966.

F. T. Cole (Lawrence Radiation Laboratory, Univ. of Calif.) *Design Study for the 200-Bev Accelerator.* January 25, 1966.

Jack Rabinow (Rabinow Electronics) *Inventions and Patents.* January 14, 1966.

Wendell R. Garner (Johns Hopkins Univ.) *Research in Pattern Perception.* January 7, 1966.

N. F. Ness (NASA Goddard Space Flight Center) *The Interaction of the Solar Wind With the Geomagnetic Field.* December 17, 1965.

Robert Panero (Hudson Inst.) *New Approaches to Latin American Technical Development.* December 10, 1965.

Bernard Smith (U.S. Naval Weapons Laboratory) *New Thoughts About Old Platforms: Railroads and Sailboats.* December 3, 1965.

Arthur Kantrowitz (Avco-Everett Research Laboratories) *Magetohydrodynamic Generators.* November 19, 1965.

Paul A. Castleman (Bolt, Beranek, and Newman) *Computer-Aided Patient Care in a General Hospital.* November 12, 1965.

Solomon J. Buchsbaum (Bell Telephone Laboratories) *Waves and Resonances in Solid-State Plasmas.* November 5, 1965.

Leonard S. Rodberg (U.S. Arms Control and Disarmament Agency) *Some Technical Problems of Arms Control.* October 29, 1965.

Charles F. Curtiss (Univ. of Wisconsin) *Transport Phenomena in Gases.* October 22, 1965.

Alfred Zmuda (JHU/APL) *Ionospheric Disturbances Related to High-Altitude Nuclear Explosions.* October 15, 1965.

1964 – 1965

Walter P. Dyke (Linfield College) *Recent Progress in Field Emission and Its Applications.* May 28, 1965.

Conrad Weisert (JHU/APL) *Computer Systems 1967.* May 21, 1965.

Benjamin Lax (Lincoln Laboratory) *Progress in Quantum Electronics.* May 14, 1965.

G. W. Stroke (Univ. of Michigan) *Optical Holography and X-Ray Microscopy.* May 7, 1965.

Carl Kiess (Georgetown Univ.) *An Interpretation of Martian Phenomena.* April 9, 1965.

Donald Nordeen (General Motors Research Lab) *Stability of Automobiles.* April 2, 1965.

William J. Spencer (Bell Telephone Laboratories) *Ultrastable Quartz Crystal Oscillators.* March 19, 1965.

Albert J. Perlis (Carnegie Inst. of Technology) *Formula Manipulation on Computers.* March 12, 1965.

Nelson Spencer (NASA Goddard Space Flight Center) *Energy Relationships in the Thermosphere.* March 5, 1965.

James W. Rouse (Community Research and Development Company) *The Planning Process – In Columbia, Maryland.* February 26, 1965.

P. James Peebles (Princeton Univ.) *Gravity Research at Princeton.* February 19, 1965.

Arthur Bonney (Arlington Presbyterian Church) *A Scientist Looks at Faith.* February 12, 1965.

John Jarem (Drexel Inst. of Technology) *Radar Scattering From Turbulent Wakes.* February 5, 1965.

Peter A. Wolff (Bell Telephone Laboratories) *Quantum Effects in Solid State Plasma.* January 22, 1965.

Morgan D. Dubrow (U.S. Dept. of Interior) *The Development and Application of Extra-High-Voltage Transmission in the United States.* January 15, 1965.

Michael J. Deutch (Consulting Engineer, Washington DC) *Economics of Nuclear Power.* January 8, 1965.

Sarah Stewart (National Cancer Inst.) *Viruses and Cancer.* December 18, 1964.

Herbert Friedman (Naval Research Laboratory) *X-Rays From Supernovae.* December 4, 1964.

Holbrook MacNeille (Case Inst. of Technology) *Experimental Films in Mathematics Teaching.* November 20, 1964.

Phillip Converse (Univ. of Michigan) *Elections and Opinion Polls.* November 13, 1964.

Wilmot Hess (NASA Goddard Space Flight Center) *Origins of Protons in the Outer Radiation Zone.* November 6, 1964.

Gordon Lill (National Science Foundation) *Project Mohole.* October 30, 1964.

Sidney Metzger (Communications Satellite Corporation) *Technical Program of the Communications Satellite Corporation.* October 23, 1964.

Stanley Donald Stookey (Corning Glass Corporation) *Photochromic Glasses.* October 16, 1964.

Joseph F. Bird (JHU/APL) *Star Formation.* October 9, 1964.

1963 – 1964

P. E. James (Syracuse Univ.) *New Viewpoints on Geography and National Power.* May 27, 1964.

Carl O. Bostrom (JHU/APL) *Results of Particle Measurements From APL Satellites.* May 22, 1964.

S. Goldblith (Massachusetts Inst. of Technology) *Radiation Preservation of Foods – Present Status and Future Prophecy.* May 15, 1964.

H. Guerlac (Cornell Univ.) *New Light on Newton's Optics.* May 8, 1964.

P. Morrison (Cornell Univ. and Massachusetts Inst. of Technology) *Cosmic X-Rays and Gamma Rays.* May 1, 1964.

R. W. Hamming (Bell Telephone Laboratories) *Chebyshev Approximation – The Minimax Criterion as an Alternative to Least Squares.* April 24, 1964.

Jesse W. Beams (Univ. of Virginia) *Some Experiments With High Constant-Speed Rotors.* April 10, 1964.

R. E. Behrends (Yeshiva Univ.) *New Insight Into Elementary Particles – The Eightfold Way.* April 3, 1964.

Abraham Bers (Massachusetts Inst. of Technology) *The Nature of Stable and Unstable Waves in Plasmas and Other Dispersive Media.* March 20, 1964.

Donald Pritchard (Johns Hopkins Univ.) *Research and Education in Oceanography at the Johns Hopkins University.* March 13, 1964.

Alexander Flax (Dept. of Defense) *Panel Flutter – Classical Small-Oscillation Theory Revisited.* March 6, 1964.

Lindsey Harmon (National Academy of Sciences) *Trends and Issues in Scientific Manpower Production.* February 28, 1964.

Samuel N. Alexander (National Bureau of Standards) *Where Are the Frontiers of Information and Data Processing Today?* February 21, 1964.

Aristide V. Grosse (Temple Univ.) *Noble Gas Compounds.* February 14, 1964.

Paul D. Maker (Ford Motor Company) *Some Experiments in Nonlinear Optics.* February 7, 1964.

H. C. Eagle (Albert Einstein Medical School) *Experimental Application of Cultured Animal Cells.* January 31, 1964.

Carleen Hutchins (Acoustician and Violinmaker) *The Physics of Violins – With Musical Illustrations.* January 17, 1964.

W. E. Danielson (Bell Telephone Laboratories) *Problems in Ballistic Missile Defense.* January 10, 1964.

S. Fred Singer (Univ. of Maryland and U.S. Weather Bureau) *Weather Satellites.* January 3, 1964.

Ali Javan (Massachusetts Inst. of Technology) *Application of the Gaseous Laser to Precision Measurements.* December 13, 1963.

Max A. Butterfield (U.S. Post Office) *Problems in Handling Large Volumes of Mail.* December 6, 1963.

M. S. Eisenhower (Johns Hopkins Univ.) *Latin America on the Verge of Revolution.* November 15, 1963.

M. Kac (Rockefeller Inst.) *The Statistical Mechanics of Some One-Dimensional Systems.* November 1, 1963.

R. C. Oldfield (Oxford Univ.) *Memory and the Theory of Schema.* October 30, 1963.

John B. Fenn (Princeton Univ., 2002 Nobel Prize for Chemistry) *High-Intensity Molecular Beams.* October 25, 1963.

T. R. Carver (Princeton Univ.) *Optical Pumping and Atomic Clocks.* October 18, 1963.

A. C. Pearce (Bell Comm) *Physics on the Moon.* October 11, 1963.

Robert R. Newton (JHU/APL) *The Shape of the Earth.* October 4, 1963.

1962 – 1963

C. Meyer (JHU/APL) *Evaluation of Surface-to-Air Missile Systems.* May 24, 1963.

H. S. M. Coxeter (Univ. of Toronto) *The Mathematics of Map Coloring.* May 17, 1963.

F. Press (California Inst. of Technology) *Recent Developments in Seismology.* May 14, 1963.

N. H. Frank (Massachusetts Inst. of Technology) *A New Look at the Teaching of College Physics.* May 3, 1963.

G. Rado (Naval Research Laboratory) *Magnetoelectric Effects in Antiferromagnets.* April 12, 1963.

M. Baranger (Carnegie Inst. of Technology) *Recent Work on Nuclear Structures.* April 5, 1963.

J. Blewett (Brookhaven National Laboratory) *Design Studies for 300 to 1000 BeV Accelerators and the Future of Large Accelerators.* March 22, 1963.

T. Litovitz (Catholic Univ.) *Ultrasonic Spectroscopy in Liquids.* March 15, 1963.

J. Ragazzini (New York Univ.) *Sampled Data Systems.* March 8, 1963.

Herman F. Mark (Brooklyn Polytechnic Inst.) *New Events in the Physics of Polymers.* March 1, 1963.

G. Leichner (Univ. of Illinois) *Use of Digital Computers for Circuit Design.* February 15, 1963.

Conway Snyder (Jet Propulsion Laboratory) *Results From the Mariner II Spacecraft.* February 14, 1963.

S. K. Friedlander and S. H. Talbot (Johns Hopkins Univ.) *Topics in Biomedical Engineering.* February 8, 1963.

W. L. Brown (Bell Telephone Laboratories) *Recent Observations of the Artificial Radiation Belts.* January 18, 1963.

T. Reynolds (St. Elizabeth's Hospital) *A Research Program in a Mental Hospital.* January 11, 1963.

W. Tantraporn (General Electric) *Thin-Film Active Elements for Use in Microelectronics.* January 4, 1963.

Leon M. Lederman (Columbia Univ., 1988 Nobel Prize for Physics) *Experiments With High-Energy Neutrinos.* December 7, 1962.

H. Margenau (Yale Univ.) *The Quantum Theory of Measurement.* November 30, 1962.

G. F. Carrier (Harvard Univ.) *On the Wind-Driven Ocean Circulation.* November 16, 1962.

D. B. Beard (Univ. of California) *Microwave Emission From Jupiter.* November 9, 1962.

E. M. Pugh (Carnegie Institute of Technology) *Fundamental Principles in the Projection and Impact Phenomena of High Speed Pellets.* November 2, 1962.

E. J. Sternglass (Westinghouse Research) *Classical Models of the Elementary Particles.* October 26, 1962.

W. L. Faust (Bell Telephone Laboratories) *Some Recent Experiments With Gaseous Optical Masers.* October 19, 1962.

R. R. Nelson (President's Council of Economic Advisors) *Scientific Research and Economic Growth: Some Problems of Public Policy.* October 12, 1962.

L. J. Rueger (JHU/APL) *Time and Frequency Standards for the Transit Satellite Program.* October 5, 1962.

1961 – 1962

G. F. Pieper (JHU/APL) *Research Results From the Injun and TRAAC Satellites.* May 25, 1962.

L. M. Branscomb (National Bureau of Standards) *The Structure and Spectra of Negative Atomic Ions.* May 18, 1962.

D. L. Allen (Purdue Univ.) *Studies on the Population Balance Between Moose and Wolves on Isle Royale.* May 11, 1962.

S. Bhagavantam (Indian Inst. of Science) *Crystal Symmetry and Physical Properties.* May 4, 1962.

V. L. Telegdi (Univ. of Chicago) *Present Problems of Muon Physics.* April 27, 1962.

Manfred R. Schroeder (Bell Telephone Laboratories) *Artificial Reverbation, Pseudostereophony, and the Digital Simulation of Concert-Hall Acoustics.* April 20, 1962.

T. Fulton (Johns Hopkins Univ.) *Classical Radiation From Uniformly-Accelerated Electrons.* April 6, 1962.

W. B. Fowler (Brookhaven National Laboratory) *Bubble Chamber Physics at the Brookhaven National Laboratory.* March 30, 1962.

R. Ferrell (Univ. of Maryland) *Collective Oscillations of Normal and Superconducting Electrons.* March 23, 1962.

S. Mason (Massachusetts Inst. of Technology) *Sensory Communication for the Blind.* March 16, 1962.

J. Charney (Massachusetts Inst. of Technology) *Some Problems in the Dynamics of Planetary Atmospheres.* March 9, 1962.

R. P. Hudson (National Bureau of Standards) *Some Experiments on Spin-Lattice Relaxation in Rare-Earth Salts.* March 2, 1962.

C. P. Sonett (NASA) *Magnetic Disturbances in the Far Exosphere.* February 23, 1962.

M. Nirenberg (National Institutes of Health, 1968 Nobel Prize for Physiology/Medicine) *Progress Toward Breaking the Genetic Code.* February 16, 1962.

R. L. Bisplinghoff (Massachusetts Inst. of Technology) *Current Problems in Aero-Thermoelasticity.* January 19, 1962.

J. E. Kunzler (Bell Telephone Laboratories) *High-Field Superconductivity and Superconducting Magnets.* January 12, 1962.

Philip Abelson (Carnegie Geophysical Laboratory) *Current Research Relevant to the Origin of Life.* January 5, 1962.

F. J. Weyl (Office of Naval Research) *A Mathematician Looks at Memory.* December 15, 1961.

D. K. Wessel (Syracuse Univ.) *Some Recent Developments in Optical and Infrared Masers.* December 8, 1961.

G. Feldman (Johns Hopkins Univ.) *The Structure of the Nucleon in New Elementary Particles.* December 1, 1961.

David J. Rose (Massachusetts Inst. of Technology) *Some Recent Advances and Future Prospects in Controlled Thermonuclear Fusion.* November 24, 1961.

P. J. Debye (Cornell Univ., 1936 Nobel Prize for Chemistry) *Critical Opalescence and Molecular Interactions.* November 17, 1961.

E. L. O'Neil (Boston Univ.) *Modern Developments in Optics and Communications.* November 10, 1961.

John C. Lilly (Communications Research Institute) *Communications by Dolphins.* November 3, 1961.

S. Fritz (U.S. Weather Bureau) *The TIROS Meteorological Satellite.* October 27, 1961.

G. E. Kimball (A.D. Little Co.) *Unsolved Problems in Production Scheduling.* October 13, 1961.

R. P. Rich (JHU/APL) *Computer Trends.* October 6, 1961.

1960 – 1961

J. Caldwell (Beach Erosion Board) *Shore Processes and Coastal Engineering.* May 19, 1961.

T. Gold (Cornell Univ.) *Processes on the Lunar Surface.* May 12, 1961.

E. Burstein (Univ. of Pennsylvania) *Investigation of Excited Carriers in Superconductors.* May 5, 1961.

R. Strause-Hupe (Univ. of Pennsylvania) *Strategy and Value.* April 14, 1961.

O. Selfridge (MIT Lincoln Laboratory) *Discussion of Problems Associated With Machine Learning.* April 7, 1961.

J. W. Carr III (Univ. of North Carolina) *Computer Programming and Theorem Proving.* March 24, 1961.

G. W. Stroke (Massachusetts Inst. of Technology) *Recent Developments in Large Diffraction Gratings.* March 17, 1961.

M. Camac (AVCO Research Labs) *Plasma Propulsion.* March 10, 1961.

Harrison Brown (California Inst. of Technology) *Resources and the Future of Industrial Civilization.* March 3, 1961.

W. F. G. Swann (Bartol Foundation) *Relativity and the Twin Paradox.* February 24, 1961.

A. J. F. Siegert (Northwestern Univ.) *Theory of Random Functions With Applications to Noise in Radio.* February 17, 1961.

N. F. Ramsey (Harvard Univ., 1989 Nobel Prize for Physics) *Significance of Potentials in Quantum Theory.* February 10, 1961.

R. V. Pound (Harvard Univ.) *A Measurement of the Weight of Photons.* January 27, 1961.

E. C. Pollard (Pennsylvania State Univ.) *Radiation Action in Molecular Biophysics.* January 11, 1961.

C. W. Little (RCA Laboratories) *Engineering Problems of the Model-C Stellarator Machine.* January 6, 1961.

T. A. Vanderslice (GE Research Lab) *Ultra-High-Vacuum Techniques.* December 16, 1960.

G. Gould (Tech Research Group) *Coherent Generation of Light: LASER Devices.* December 9, 1960.

R. M. Scammon (Government Affairs Inst.) *Programming Election Predictions.* December 2, 1960.

V. W. Hughes (Yale Univ.) *Muonium.* November 18, 1960.

R. Heikes (Westinghouse Research) *Relationships Between Electrical and Magnetic Properties of Selenium.* November 11, 1960.

D. Wechsler (NYC College of Medicine) *Machine and Human Thinking.* October 21, 1960.

Hugh Odishaw (Space Science Board) *Some Aspects of the International Geophysical Year (IGY) of Current Interest.* October 14, 1960.

1959 – 1960

J. L. Delcroix (Univ. of Paris) *The Four Modes of Wave Propagation in Plasmas.* September 30, 1960.

Eugene N. Parker (Univ. of Chicago) *The Solar Wind.* April 22, 1960.

Ernest P. Gray (JHU/APL) *Diffusion and Recombination in Afterglows.* April 20, 1960.

W. Markowitz (U.S. Navy Observatory) *Precision Time and Frequency From VLF Transmissions.* April 15, 1960.

Buckminster Fuller (Southern Illinois Univ.) *Light-Weight Structures.* April 13, 1960.

N. S. Kapany (Armour Research Foundation) *Recent Work on Fiber Optics.* April 8, 1960.

C. N. Yang (Inst. for Advanced Study, 1957 Nobel Prize for Physics) *Some Considerations of Possible Experiments With High-Energy Neutrinos.* March 25, 1960.

K. R. Atkins (Univ. of Pennsylvania) *First, Second, Third, Fourth, and Zeroth Sounds in Liquid Helium.* March 18, 1960.

M. S. Livingston (Massachusetts Inst. of Technology and Harvard Univ.) *The 6-BeV Cambridge Electron Accelerator: Novel Problems.* March 11, 1960.

M. I. Nathan (IBM Research) *The Physics of the Esaki (Tunnel) Diode.* March 4, 1960.

N. Marcuvitz (Polytechnic Inst. of Brooklyn) *Fields and Plasmas.* February 26, 1960.

R. W. Hoffman (Case Inst. of Technology) *Magnetic and Mechanical Properties of Thin Films.* February 19, 1960.

R. D. Richtmyer (New York Univ.) *Some Numerical Calculations of Detached Shock Waves.* February 11, 1960.

Joseph Weber (Univ. of Maryland, College Park) *Gravitational Waves.* February 5, 1960.

E. P. Wigner (Princeton Univ., 1963 Nobel Prize for Physics) *Probability of Existence of a Self-Reproducing Unit.* January 22, 1960.

William H. Huggins (Johns Hopkins Univ.) *"Antennas" in Signal Space.* January 15, 1960.

James W. Follin Jr. (JHU/APL) *Initial Light-Element Formation in an Expanding Universe.* January 8, 1960.

Herman Kahn (Rand Corporation) *Nature and Feasibility of War and Deterrence.* December 18, 1959.

Solomon J. Buchsbaum (Bell Telephone Laboratories) *Interaction of an Electromagnetic Field With a Bounded Plasma.* December 11, 1959.

H. C. Higgins (Eastman Kodak Corporation) *The Applications of Communication Theory to Photographic Systems.* December 4, 1959.

K. Bullington (Bell Telephone Laboratories) *Systems Engineering for Speech Interpolation Equipment.* November 20, 1959.

C. M. Herzfeld (National Bureau of Standards) *Recent Developments in Crystal Field Theory.* November 13, 1959.

J. A. Wheeler (Princeton Univ.) *Einstein's Views of Space and Time: Present Status and Future Prospects.* November 6, 1959.

F. T. McClure (JHU/APL) *Solid-Propellant Rockets as Acoustic Resonators.* October 30, 1959.

A. C. Kolb (Naval Research Laboratory) *Acceleration and Confinement of Dense Plasmas.* October 23, 1959.

D. R. Bates (Queen's College, Belfast) *The Night Glow.* October 9, 1959.

1958 – 1959

William H. Guier (JHU/APL) *Satellite Tracking by Doppler Techniques.* May 22, 1959.

W. Heikkila (Defense Research Board) *Arctic Radio Propagation Phenomena.* May 15, 1959.

S. B. Hendricks (Dept. of Agriculture) *Physics and Biology, or the Physiology of Plants.* May 8, 1959.

Robert R. Newton (JHU/APL) *Optimization of Ballistic-Missile Trajectories.* April 24, 1959.

G. Burbidge (Yerkes Observatory) *Stellar Populations and the Chemical Evolution of the Stars.* April 17, 1959.

A. A. Brown (A.D. Little Co.) *Some Concepts of Civilian Operations Research.* April 10, 1959.

F. J. Adrian (JHU/APL) *Radio-Frequency Spectroscopy and the Chemical Bond.* April 3, 1959.

G. Bekefi (Massachusetts Inst. of Technology) *Microwave Plasma Diagnostics.* March 20, 1959.

P. Morrison (Cornell Univ.) *The Origins of Cosmic Rays.* March 13, 1959.

J. Gurley (Brookings Institution) *Theory of Money.* March 6, 1959.

F. Rohrlich (Johns Hopkins Univ.) *Negative Atomic Ions.* February 27, 1959.

F. Rosi (RCA Laboratories) *Evaluation and Properties of Materials for Thermoelectric Applications.* February 20, 1959.

S. Fred Singer (Univ. of Maryland) *The Origin of the Earth's Radiation Belts.* February 13, 1959.

L. J. Chu (Massachusetts Inst. of Technology) *Macroscopic Electrodynamics.* January 23, 1959.

D. E. Kerr (Johns Hopkins Univ.) *Reactions in Low-Energy Plasmas.* January 16, 1959.

P. L. Garvin (Georgetown Univ.) *Mechanical Translation.* January 9, 1959.

W. H. Louisell (Bell Telephone Laboratories) *Parametric Amplifiers.* December 12, 1958.

J. B. Johnson (Thomas Edison Inc.) *Edison's Contribution to Thermionics.* December 5, 1958.

J. L. Jackson (National Bureau of Standards) *Free-Radical Statistics.* November 21, 1958.

W. C. Elmore (Swarthmore College) *The Compression of a Plasma by a Rising Axial Magnetic Field.* November 14, 1958.

J. L. Prather (George Washington Univ.) *Atomic Energy Levels in Crystals.* November 7, 1958.

R. H. Simpson (U.S. Weather Bureau) *Factors Influencing the Release of Energy in a Hurricane.* October 31, 1958.

S. C. Lin (AVCO Research Labs) *Recent Problems in High-Temperature Gas Dynamics.* October 17, 1958.

J. R. Pierce (Bell Telephone Laboratories) *Use of Satellites for Transoceanic Communications.* October 10, 1958.

N. W. Lord (JHU/APL) *Electron-Nuclear Double Resonance: A Sensitive Detector of Energy.* October 3, 1958.