New IOM Members

The Institute of Medicine–National Academy of Sciences has elected 50 new members, making the total active membership 371 when their terms begin on 1 January. Nine persons were elected directly to senior membership, a category established in 1977, to recognize individuals 66 years old and older. The new members are:

Mary Ellen Avery, professor of pediatrics, Harvard Medical School; **Albert L. Babb**, chairman of nuclear engineering, University of Washington; **Baruj Benacerraf**, president, Sidney Farber Cancer Institute, Harvard Medical School; **Floyd E. Bloom**, director, Arthur V. Davis Center for Behavioral Neurobiology, The Salk Institute; **Baruch S. Blumberg**, associate director for clinical research, The Institute for Cancer Research; **Edward N. Brandt, Jr.**, assistant secretary for health, U.S. Department of Health and Human Services; **Robert H. Brook**, senior staff health services researcher, The Rand Corp.; **Eric J. Cassell**, practitioner of internal medicine, New York City; **John D. Chase**, acting dean of medicine, University of Washington, Seattle; **Shirley S. Chater**, vice chancellor, academic affairs, University of California, San Francisco; **H. D. Collins**, practitioner of internal medicine, Caribou, Maine; **Pedro Cuatrecasas**, vice president of research, The Wellcome Research Laboratories, Research Triangle Park.

Worth B. Daniels, Jr., practitioner of internal medicine, Baltimore, Maryland; **Roman W. DeSanctis**, director of clinical cardiology, Massachusetts General Hospital; **Donnell D. Etzwiler**, pediatrician, St. Louis Park Medical Center, Minneapolis; **Alfred P. Fishman**, director, cardiovascular-pulmonary division, Hospital of the University of Pennsylvania; **Margaret J. Giannini**, director, Rehabilitative Engineering Research & Development Service, Veterans Administration; **Joseph Goldstein**, professor of law, Yale Law School; **David S. Greer**, dean of medicine, Brown University; **Barbara C. Hansen**, assistant professor of physiology, University of Michigan; **Clark C. Havighurst**, professor of law, Duke University; **Ruby P. Hearn**, assistant vice president, The Robert Wood Johnson Foundation; **Joseph L. Henry**, associate dean of oral diagnosis and radiology, Harvard School of Dental Medicine.

S. Richardson Hill, Jr., president, University of Alabama, Birmingham; **W. N. Hubbard, Jr.**, president, The Upjohn Co.; **Richard Janeway**, dean, Bowman Gray School of Medicine, Wake Forest University; **W. K. Joklik**, chairman of microbiology and immunology, Duke University Medical Center; **Mary E. Jones**, professor of biochemistry and nutrition, University of North Carolina, Chapel Hill; **Samuel L. Katz**, chairman of pediatrics, Duke University Medical Center; **Charles R. Kleeman**, professor of nephrology and medicine, University of California, Los Angeles; **Norman Kretchmer**, nutritional sciences, University of California, Berkeley; **Thomas W. Langfitt**, vice president for health affairs, University of Pennsylvania; **Joyce C. Lasnof**, assistant director, Office of Technology Assessment, Washington, D.C.

Barbara J. McNeil, professor of radiology, Brigham and Women's Hospital, Boston; **Thomas W. Moloney**, senior vice president, The Commonwealth Fund; **John H. Moxley, III**, vice president, American Medical International, Inc., Beverly Hills; **Bernard W. Nelson**, executive vice president, The Henry J. Kaiser Family Foundation, Menlo Park; **Daniel A. Okun**, professor of environmental engineering, University of North Carolina, Chapel Hill; **Thomas K. Oliver, Jr.**, chairman of pediatrics, University of Pittsburgh; **Seymour Perry**, assistant surgeon general, U.S. Public Health Service; **Frank A. Riddick, Jr.**, medical director, Ochsner Clinic, New Orleans; **Judith Rodin**, professor of psychology and psychiatry, Yale University; **Saul A. Rosenberg**, professor of medicine and radiology, Stanford University; **Mary M. Runge**, community pharmacist, Moraga, California; **James H. Sammons**, executive vice president, American Medical Association.

Frank A. Sloan, professor of economics, Institute for Public Policy Studies, Vanderbilt University; **Reuel A. Stallones**, dean of public health, University of Texas, Houston; **Paul D. Stolley**, professor of medicine, University of Pennsylvania; **Raymond P. White, Jr.**, dean of dentistry, University of North Carolina, Chapel Hill; **Maurice Wood**, director of research, family practice department, Medical College of Virginia.

The new senior members are:

Lowell T. Coggeshall, emeritus vice president, University of Chicago; **Michael E. DeBakey**, chancellor, Baylor College of Medicine; **E. Cuyler Hammond**, professor of community medicine, Mt. Sinai School of Medicine; **George T. Harrell**, emeritus vice president for medical sciences, Pennsylvania State University; **Alexander D. Langmuir**, visiting professor of epidemiology (retired), Harvard Medical School; **Bernice L. Neugarten**, professor of education and sociology, Northwestern University; **John Romano**, professor of psychiatry, University of Rochester; **Doris R. Schwartz**, faculty, School of Continuing Education for Nurses, New York Hospital–Cornell Medical Center; **George A. Silver**, professor of public health, School of Medicine, Yale University.

ought to be avoided at all costs. It would be far safer, Edison argued, to rely on direct current, just as he did in the small power plant he owned and operated in Manhattan. Edison went so far as to suggest that experimenting with alternating current should be made illegal in order to protect public health and safety. Nevertheless, Tesla's system was installed at Niagara Falls in 1896, and interest in Edison's direct current system faded rapidly.

Frank Jenkins, a vice president of Duke Power in Charlotte, North Carolina, looked into Tesla's career in writing a paper for a symposium in 1975. He found, he says now, that "Tesla has had far more impact on the United States and the world than Edison. What we have in terms of power generation, transmission, distribution, the basic elements that make up our use and applications of electric energy—the vast majority stems directly out of Tesla's contributions." Jenkins says it is unfortunate that Tesla has not been given more attention, and he thinks that Tesla's battle with Edison may have done long-term damage to his reputation.

Understandably, Tesla's admirers claim things for him that many historians of science will not grant. There is no question, however, that his work on alternating current systems was a major contribution to industry and the greatest practical achievement of his career. Tesla himself showed little interest in developing these inventions for commercial application; that he left to his partner, Edward Westinghouse. (Westinghouse, nearly bankrupt, eventually found it necessary to make a deal with his chief competitor, General Electric, swapping Tesla's patents for others held by GE.)

Tesla went off to conduct experiments with high-frequency resonances in coils. He also developed a specialty he called "teleautomatics," inventing machines that could be given commands by a remote transmitter. In 1897, the year Marconi took out a U.S. patent for the wireless, Tesla built a model boat that could be steered and made to fire explosives by remote control. He also developed a radio-guided torpedo.

Tesla's most spectacular experiments were carried out in 1899 at Colorado Springs, Colorado. There he built an enormous coil that he used to generate up to 10 or 12 million volts of current, creating sparks that were said to leap a gap of 135 feet. The effects were dazzling, but the machine never lived up to its promise. This "generator," like the one on Long Island financed by J. P. Morgan, was intended to electrify the

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