Teaming Up to Improve Health: NIH-Funded Advances by America’s Medical Schools and Teaching Hospitals

For more than 60 years, the National Institutes of Health has teamed with the nation’s medical schools and teaching hospitals to pioneer many of medicine’s most remarkable advances, including life-saving vaccines; new and better treatments for diabetes, cancer and heart disease; and advanced technology to improve quality of life, from artificial hips to minimally invasive techniques.

Today, Americans are living healthier, longer lives thanks to NIH-supported research and the efforts of the nation’s medical schools and teaching hospitals:

- Death rates from heart disease and stroke have been cut in half
- More and more Americans are surviving cancer, and
- Seniors are more active than ever before in their “golden years,” with disability rates for people 65 years and older having dropped by 25 percent.

Here are some examples of NIH-funded research advances achieved at the nation’s medical schools and teaching hospitals since 1990:

1990  Discovered that premature babies can be saved from blindness and vision complications by freezing part of the eye
      Oregon Health & Science University School of Medicine

      Basic science research on breast cancer cell proteins, leading to the development of the drug Herceptin®, effective in 20-30 percent of breast cancers
      University of Pennsylvania School of Medicine

1992  Discovered the gene for Huntington’s Disease, allowing the development of a screening test for families at risk
      Harvard Medical School, Massachusetts General Hospital

      Developed the Arrow LionHeart™ - the first wireless, electrically transmitted, implanted heart assist device to reach clinical trials
      Pennsylvania State University College of Medicine,
      Milton S. Hershey Medical Center
Determined that not all organ transplant recipients require costly lifelong anti-rejection drugs, radically changing the way organ rejection is managed

University of Pittsburgh School of Medicine

1993 Pioneered new uses for MRI imaging technology to better understand the brain and disorders that affect it

University of Minnesota Medical School

1994 Developed the first cardiac stent approved by the FDA for use in keeping coronary arteries open

University of Texas Medical School at San Antonio

1995 Developed the first vaccine for cholera, now in clinical trials

Harvard Medical School

1996 Identified the gene for basal cell carcinoma, a common form of skin cancer

Stanford University School of Medicine

1998 Identified a gene for prostate cancer

Johns Hopkins University School of Medicine, University of Maryland School of Medicine, Fox Chase Cancer Center and the Mayo Clinic

Identified the protein that more reliably signals warning signs for cervical cancer, leading to an improved standardized screening test

University of California, Irvine, College of Medicine

Discovered that the drug tamoxifen decreases the incidence of breast cancer by almost 50 percent in women who have a higher risk of developing the disease

National Surgical Adjuvant Breast and Bowel Project (lead researcher from University of Pittsburgh School of Medicine)

2000 Discovered a way to prevent chemotherapy-related hearing loss in children undergoing cancer treatment (nearly one-third of all children with cancer experience permanent hearing loss)

Oregon Health & Science University School of Medicine

Bioengineered corneal tissue to restore or improve vision in blind or visually impaired patients

University of California, Davis, School of Medicine

2001 Discovered the genetic cause of myotonic dystrophy, the most common type of muscular dystrophy in adults

University of Minnesota Medical School

Discovered the hormone, “resistin” that promotes type-2 diabetes and is resistant to insulin

University of Pennsylvania School of Medicine
2003  Determined that Americans at risk of developing advanced age-related macular
degeneration can avoid vision loss by taking daily supplements of antioxidant
vitamins and zinc
  Johns Hopkins University School of Medicine

2004  Discovered a new, progressive neurological disorder affecting men over age 50
that causes tremors, balance problems and memory deficits
  University of California, Davis, School of Medicine; University of Colorado
  Health Sciences Center; RUSH-Presbyterian-St. Luke’s Medical Center

  Designed a robotic, prosthetic arm controlled by the brain that promises to
  restore mobility to patients with paralyzing injuries or lost limbs
  University of Pittsburgh School of Medicine

To learn more about medical firsts achieved in your state or local medical school and
teaching hospital, go to the Fulfilling the Promise Web site (www.aamc.org/ftp) and click
on life-saving innovations to access the AAMC’s Discoveries and Innovations in Patient
Care and Research Database.