40 Years of Progress in Cancer Research

Transforming Patient Care through Innovation

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Cancer Research: A Wise Investment

• Significant Return on Investment
  – Health, Economy, Competitiveness

• Need to Sustain the Investment
National Cancer Act of 1971

$90 billion over 40 years invested in cancer research
Currently in the U.S. Approximately 12 Million Cancer Survivors
Cancer Research: Return on Investment

40 yr investment in cancer research~ $90 B
(Compared to annual costs incurred due to cancer > $250B)

1% decrease in mortality = $500B (current and future wealth)*

* Topol, U. Chicago

>20% decreased mortality since 1991 = $10 Trillion!

898,000 more Cancer Patients Celebrated Birthdays (1990-2007)

12 Million Cancer Survivors

Value of technological advances (Medicine, Pharma, Biotech, etc.)

.............Priceless!
Human Genomics - 20 years on

1991
500 of these

1991

$3,800,000,000*

2011

1 of these

2011

$1,000

15 years

< 1 day

*Return on Investment: = ~300-fold
($796,000,000 Economic Impact; $294,000,000 Personal Income)
Synergy between Public and Private Sectors

- Academia: Research → Knowledge → Target Discovery
- Industry: Target → Drug Screening → Drug
- Academia + Industry + Patients → Clinical trial design/execution
Synergy between Public and Private Sectors

Breast Cancer
MIT/UCLA → Target: Her2
Genentech → Drug: Herceptin (trastuzumab)

Leukemia/GIST
U. Penn/OHSU/UCLA → Target: BCR-Abl
Novartis → Drug: Gleevec (imatinib)

Lung Cancer (non-smokers)
Dana Farber/Sloan-Kettering → Target: EGFR
OSI → Drug: Tarceva (erlotinib)
Cancer Research: A Wise Investment

• Investments in NIH and NCI creates jobs and economic growth across the U.S.

• NIH funding:
  – generates more that 2 times as much in state economic output where research is conducted
  – led to the creation of 487,900 jobs in 2010
  – generated $68 billion in new economic activity across the country in 2010
Important Scientific Challenges Ahead

- Develop equivalent of a “Cholesterol” for Cancer—Early detection, prevention, effective treatment
- Determine which patients will benefit from treatment
- Identify Achilles’ heels in each patient’s cancer (individualized therapy)
- Tumor heterogeneity; Drug resistance
- Attack metastasis
NIH Funding Not Keeping Pace with Inflation
“The Federal Government, in cooperation with non-Federal organizations, is committed to finding the cause and cure of all forms of cancer and of controlling it to the extent possible while that search goes on.”

President Jimmy Carter
Cancer Control Month Proclamation, March 15, 1978
Support for Cancer Research is Non-Partisan

“That for those who have cancer and who are looking for success in this field, they at least can have the assurance that everything that can be done by government, everything that can be done by voluntary agencies in this great, powerful, rich country, now will be done.”

President Richard M. Nixon
Remarks on Signing the National Cancer Act of 1971, December 23, 1971

“Our intensified cancer research effort was born of public concern about the problems of cancer, which takes many forms, and it has our continuing support and commitment.”

President Gerald R. Ford
Message to Congress When Transmitting Report and Plan for the National Cancer Program, April 5, 1976

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“Vigorous cancer research, directed to both treatment and prevention, must continue. All of us look to the day when this disease has been eradicated as a major threat to American lives.”

President Ronald W. Reagan
Cancer Control Month Proclamation, March 20, 1981

“Two decades of intensified research have borne fruit in every aspect of our national effort to reduce the toll cancer takes on our society.”

President George H. W. Bush
Cancer Control Month Proclamation, April 12, 1991

“If we follow our present course—investing in research, translating research findings into medical practice, and increasing access to improved diagnostic and treatment programs—we can continue to make significant progress in our crusade against cancer. We must not slacken our efforts until we can fully control this devastating disease and ultimately eradicate it.”

President William J. Clinton
Cancer Control Month Proclamation, March 31, 1996

“In order to win the war against cancer, we must fund the war against cancer.”

President George W. Bush
Remarks on Preventive Cancer Screenings, September 18, 2002

“(we) will launch a new effort to conquer a disease that has touched the life of nearly every American, including me, by seeking a cure for cancer in our time.”

President Barack H. Obama
Address to Joint Session of Congress, February 2009
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“Our greatest responsibility is to be wise Ancestors.”

...Jonas Salk
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