This is a time of remarkable opportunity in cancer research.

Each year, the National Cancer Institute highlights the current state of cancer research and promising opportunities ahead in presenting its professional judgment for federal funds needed to enhance the nation’s investment in cancer research.

The Cancer Landscape Is Changing

Cancer death rates have dropped steadily
From 1990 through 2011, the overall cancer death rate in the United States fell by 22 percent.

More people are surviving cancer
It is estimated that cancer survivors will account for more than 5 percent of the U.S. population in 2022.

Cancer prevention, screening, and treatment are improving
Decades of research have allowed us to develop tailored preventive, screening, and treatment approaches for people at increased risk of developing cancer.

The global burden of cancer is expanding
An aging worldwide population is leading to an increase in many diseases, including cancer.

At the same time, support for cancer research is eroding
Our ability to seize promising opportunities is being compromised by the declining purchasing power of the NCI budget.
The NCI Is Building on the National Cancer Program

As the cancer landscape changes, the NCI is building on its core cancer research functions.

Supporting Scientists
Support for the best science underpins everything the NCI does; therefore, attracting the best minds to the field of cancer research is paramount.

NATIONAL CANCER INSTITUTE
Training the Workforce

In FY 2013, NCI supported 3,590 emerging cancer researchers through training and career development grants and intramural research experiences.*

NCI-DESIGNATED CANCER CENTERS

There are 20 cancer centers, 41 comprehensive cancer centers, and 7 research centers.

Providing Research-Based Cancer Care Across the United States
The NCI supports 68 NCI-Designated Cancer Centers, which conduct research and deliver high-quality cancer care to patients in diverse communities across the nation.

* Numbers do not include students and postdoctoral fellows supported by NCI research project grants, cancer center grants, and other non-training mechanisms.
Testing New Approaches to Prevention and Treatment
People with cancer now live longer lives in part because of interventions that have come from the NCI's clinical trials network, involving thousands of institutions, researchers, and patients.

Overcoming Cancer Health Disparities
Cancer affects some racial and ethnic groups more than others. The NCI works to overcome the unequal burdens of cancer by supporting research into the biological differences of cancer and barriers to equitable health care.

Conducting High-Risk, High-Impact Research
The NCI supports teams of intramural research scientists who conduct basic, clinical, and population-based research, including the study of rare cancers, at the National Institutes of Health Clinical Center in Bethesda, Maryland, and in offices and laboratories around the area, including the Frederick National Laboratory for Cancer Research in Frederick, Maryland.

Mining “Big Data” to Accelerate Research
Data coordination is especially important for cancer genomics, in which millions of data points are frequently collected on each patient. Keeping up with the pace of acquisition of new information requires continual bioinformatics infrastructure upgrades, which are critically important and costly.

Support for Research Saves Lives
The Future of Cancer Research

As these examples illustrate, important scientific opportunities are before us. With sustained investments, the NCI can stimulate development of new cancer therapies, demonstrate sound public health leadership, and improve outcomes for patients with cancer across the globe.

Promising Opportunities in Cancer Research

The NCI is pursuing the following promising opportunities in cancer research:

1. **Building on Discoveries in Cancer Genomics**
The NCI launched The Cancer Genome Atlas (TCGA) for adults and Therapeutically Applicable Research to Generate Effective Treatments (TARGET) for children to decipher the genomes of many cancers to understand their complexity and diversity. The programs have led to new approaches to cancer diagnosis and treatment and continue to deepen our understanding of the features common to several cancer types.

2. **Advancing Precision Medicine Trials**
The TCGA and TARGET initiatives and others are leading to clinical trials for patients whose tumors will be genomically tested and whose treatment will be based on the identified molecular abnormalities. Conducting a new generation of genomic clinical trials requires sophisticated and expensive technologies and clinical processes.

3. **Harnessing the Promise of Immunotherapy**
Engineering a patient’s own immune system to seek and destroy cancer cells has shown the potential to lead to lasting remissions. The journal Science designated “immunotherapy of cancer” its Breakthrough of the Year in 2013, thanks to the recent progress made in patients.

4. **Making Progress against Childhood Cancers**
The NCI conducts extensive research into cancers in children, ranging from basic scientific investigations to the testing of new therapies, including immunotherapy and those abandoned by industry. The NCI oversees clinical trials available to children at more than 200 institutions throughout the United States and Canada.

5. **Developing Therapies for RAS-Driven Cancers**
Researchers have known for decades that about one-third of all cancers are driven by mutations in the RAS family of genes. To accelerate progress, the NCI recently launched the large-scale RAS Initiative, involving the NCI, academia, and industry to seek therapeutic strategies for patients with RAS-driven cancers.

6. **Finding New Strategies to Prevent Cancer**
Prevention has the potential to save more lives from cancer than treatment. Research on tobacco control, preventing cancers caused by viral infections, and chemoprevention are three areas that have the potential to substantially reduce cancer incidence in the future.

To view the NCI Annual Plan and Budget Proposal for Fiscal Year 2016 visit: www.cancer.gov/NCIresearchfuture

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