

# “Cancer Moonshot” — Accelerating Cancer Drug Development

## Editorial

Nextech Invest



US Vice-President Biden presents the Cancer Moonshot at the World Economic Forum on January 22 in Davos, Switzerland. Photo: World Economic Forum

The Cancer Moonshot program made the headlines again when Joe Biden, US Vice-President, chaired a high-profile panel at the World Economic Forum in Davos, Switzerland. The panel discussion included world renowned scientists from important areas of cancer research. Nextech Invest’s Scientific Board member Dr. Charles Sawyers, Chair of Human Oncology and Pathogenesis at the Memorial Sloan-Kettering Cancer Center, was one of the distinguished experts

participating in the discussion.

The panelists agreed that now the time is right to launch an effort against cancer and highlighted the importance of the role that Big Data might play in such an initiative.

The Cancer Moonshot was initially launched by Biden in October 2015 in an effort to leverage recent scientific advances into a comprehensive program to tackle cancer. The program was officially endorsed by US President Barack

Obama in his State of the Union Address on January 12, 2016, when he tasked the vice-president to lead the effort.

The initiative aims at finding a cure for cancer and to double the current pace towards achieving this goal. In order to accomplish this objective a twofold approach is taken: increase funding from public and private sources for cancer research and break down silos, that is encourage inter-disciplinary collaboration and use of data.

***“The field has obtained such a critical mass of knowledge that now we are ready.”***

– Dr. Jose Baselga

Basic research funding in the US has been a frequent target of budget cuts in recent years with constrained federal budgets, for example the overall research funding through the National Institutes of Health (NIH) has been stagnant at approximately USD 5 billion,

with only USD 195 million available to fund new cancer research. The Obama administration plans to spend USD 1 billion in the fiscal year 2017 on the Cancer Moonshot program in total and increase funding for new cancer research alone to USD 755 million. The increased budget will be funneled through the NIH and the

### Why the time is right to launch a Cancer Moonshot

- > Substantial progress in the understanding of cancer biology
- > Technological capabilities (DNA sequencing, etc.) have improved exponentially
- > Regulatory bodies now guide investigators in accelerated drug development and approval processes
- > Venture Capital funds Biotech companies, which turn basic research into new drugs in a fast and cost efficient manner
- > More discoveries and faster approvals will lead to more opportunities for venture investors

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### ***Cancer Moonshot fact sheet***

- > *Official US government initiative launched in 2015*
- > *Seeks to double the speed of cancer research*
- > *Program spending in 2017 will be USD 1 billion*
- > *Integrated approach of increased research funding, drug development incentives and coordination*
- > *Fosters collaboration between experts from all relevant disciplines*

Food and Drug Administration (FDA). Yet, the Cancer Moonshot not only aims to increase this number directly by expanding government funding, but also strives to raise private funding through targeted incentives. Increased funding already is great news for cancer research, but beyond that, increased collaboration is another important component of the program that we expect to have lasting impact on the drug development landscape. Combining the best minds from different areas of expertise in cancer research and bring in outside knowledge on the efficient use of large amounts of patient data from clinical trials could prove decisive to generate

scientific breakthroughs and transform them into cancer therapies.

The effort will encourage collaboration between researchers and the government, to extend to industry, patient groups, and philanthropists towards the goal. In fact, the task force created to this end includes the major funding organizations NIH, National Science Fund, Department of Defense, Veterans Affairs, scientific coordinators such as the National Cancer Institute (NCI), the FDA as regulatory body, and other government offices and secretaries. The goal of this task force is to identify opportunities for public-private partnerships and to alleviate regulatory barriers in research and the drug approval process to advance new therapeutic options. For this purpose the FDA will establish a virtual Oncology Center of Excellence bringing regulatory experts and researchers together. A key element of the collaboration between different interest groups is enhanced sharing of data. Recent technological advances in the areas of genomics (gene analysis) and proteomics (analysis of proteins) allow us today to identify cancer types based on specific markers in the patients’ bloodstream.

These screening activities generate large amounts of data and this initiative aims to use and analyze this data in addition to further advances in screening technologies. A prominent example is the American Association of Cancer Research (AACR) GENIE project (Genomics, Evidence, Neoplasm, Information, Exchange) that is spearheaded by Nextech Scientific Board member Dr. Charles Sawyers. GENIE aims to better understand and identify specific forms of cancer – from genomic screening data. This information will be used to develop new therapies targeting each cancer type.

***“It’s a missed opportunity if we don’t leverage all this data.”***

*– Dr. Charles Sawyers*

The Cancer Moonshot was broadly welcomed by the general public and scientific community. However, the objective of the program is ambitious, it faces a multitude of challenges and the complexity of the various cancer diseases. As cancer is not a single disease but rather

comprises more than 200 distinct types, a more sophisticated understanding of cancer biology will be required not only on a cancer type level, but also on a patient level to make substantial progress.

The Cancer Moonshot program will open a window of opportunity for drug-developers and biotech companies. We expect the hike in basic research funding to result in an enhanced understanding of cancer biology and thus open up new therapeutic avenues for targeted therapies, immuno-oncology and combined therapeutic approaches. Furthermore, the increased sharing of data will allow for improved selection of patient groups that are likely to respond in clinical trials thus leading to higher success rates and lower drug development costs. These technologic advances will be complemented by regulatory changes that help to bring cures to the market faster. Overall the Cancer Moonshot program will serve as an accelerator for cancer drug development and as such presents an opportunity for biotech and a promise to mankind.

For more information on the Cancer Moonshot, watch the WEF panel discussion [here](#).