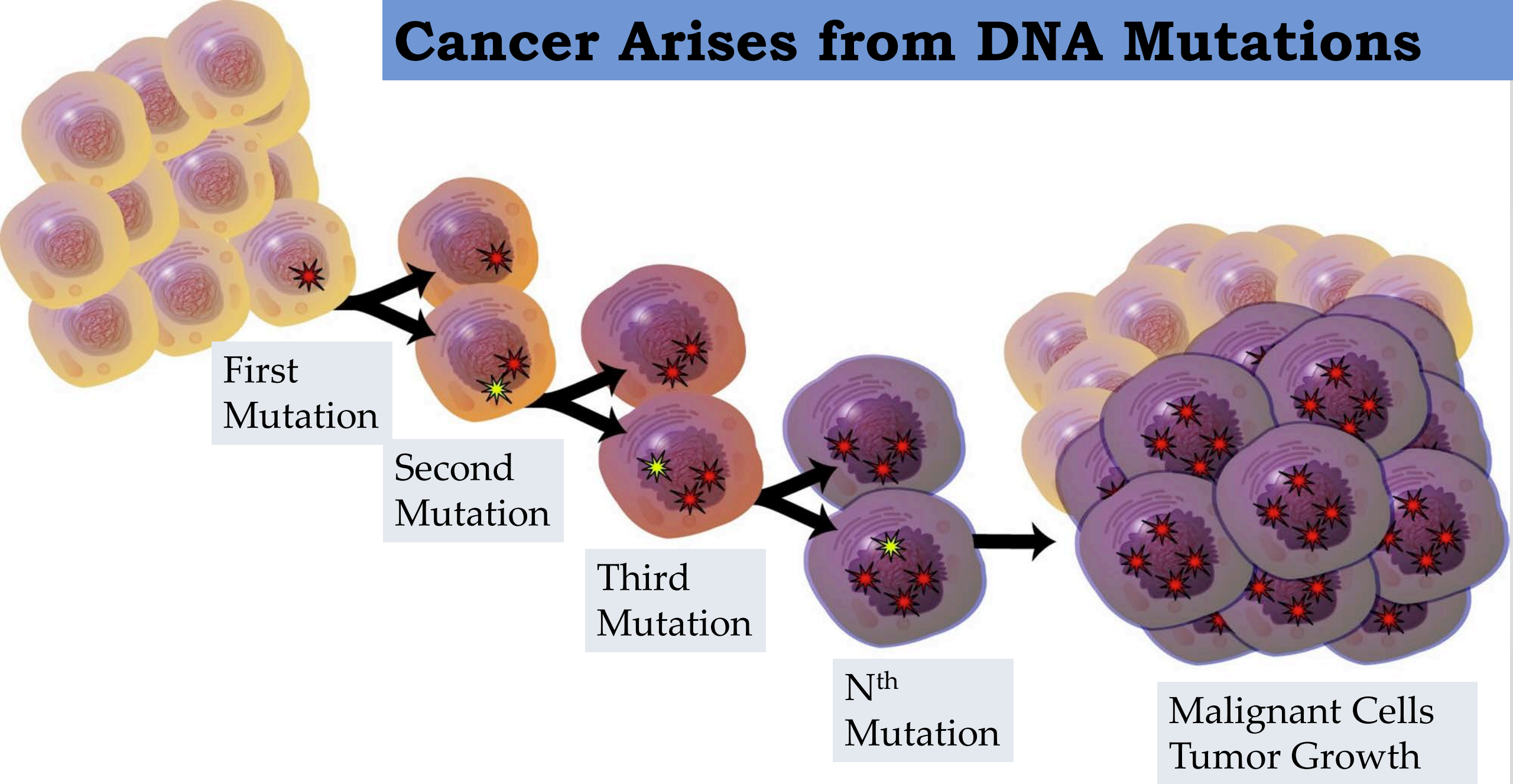




# **Precision Medicine & Cancer**

# Cancer Arises from DNA Mutations



Normal Person



BRAF WT

Melanoma Patient  
(~60%)



BRAF **V600E**

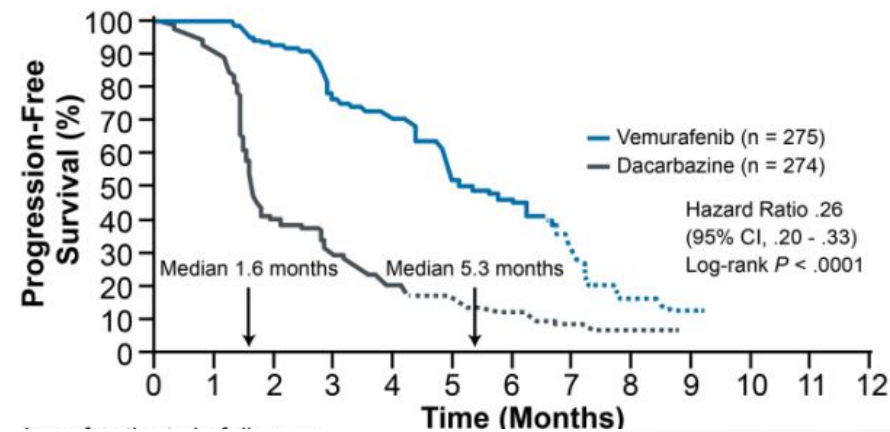
Vemurafenib

Before Treatment      Vemurafenib  
15 Weeks



Wagle, JCO, 2011

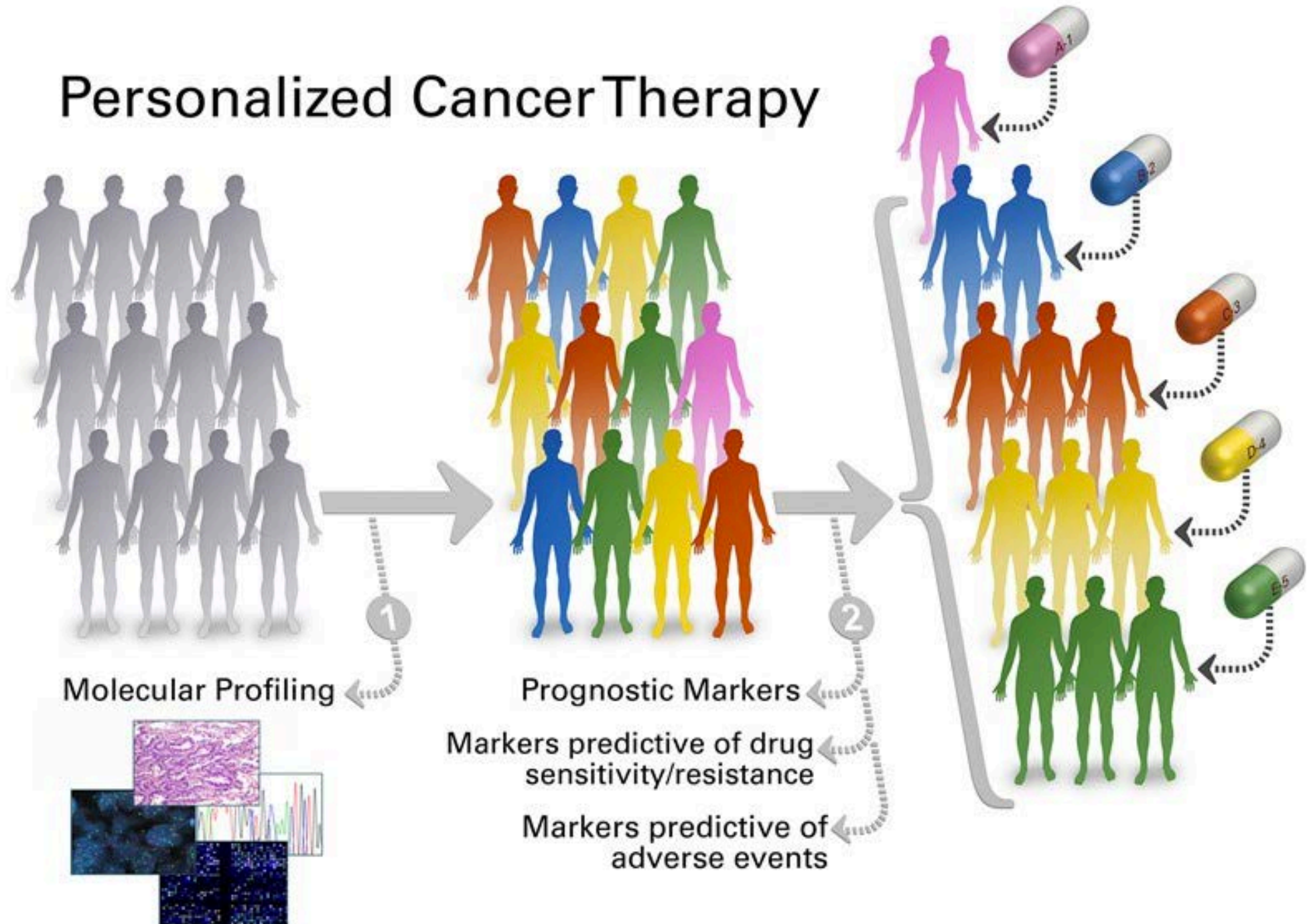
Progression-Free Survival



Chapman, NEJM 2011



# Personalized Cancer Therapy



## WHY NOW?

The **time is right** because of:

Sequencing  
of the human  
genome



Improved  
technologies for  
biomedical analysis



New tools  
for using large  
datasets



NCI Precision Medicine Initiative

## More research

Molecular Marker

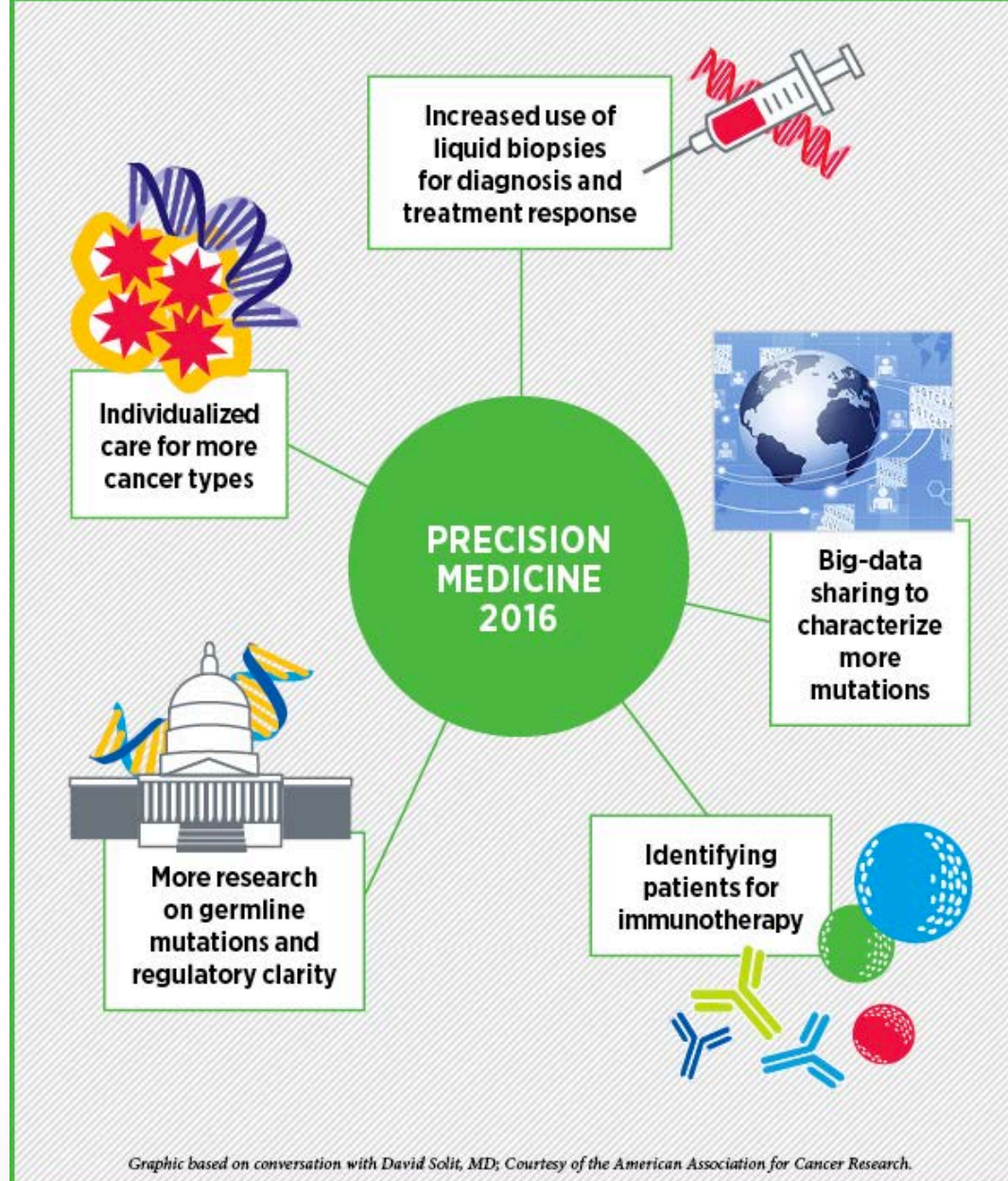


## Education

- Patient
- Clinicians

## Regulatory Policies

# PRECISION MEDICINE: WHAT TO EXPECT IN 2016?



## Mutation Detection

Liquid biopsies

## Data Management

Privacy

## Cost/Economics



# Speakers

- **Atul Butte** (University of California, San Francisco)
  - Personalized medicine and big data
- **Shannon Stott** (Harvard Medical School)
  - New technologies for blood-based biomarkers
- **Rihab Nasr** (American University of Beirut)
  - Targeted Therapy
- **Mazin Magzoub** (New York University, Abu Dhabi)
  - Targeted drug delivery