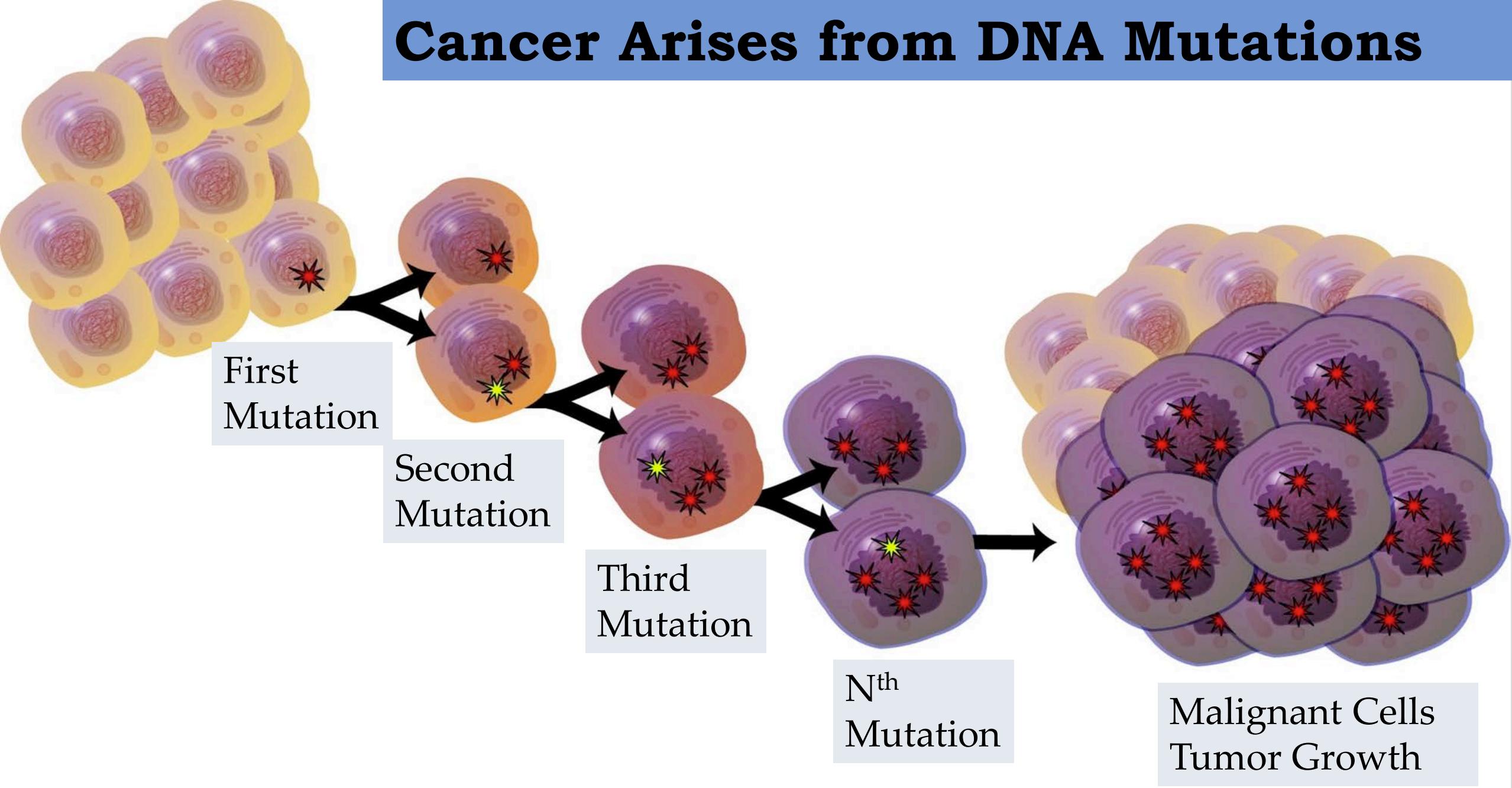
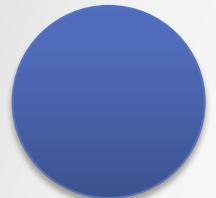


Precision Medicine & Cancer

Cancer Arises from DNA Mutations



Normal Person



BRAF WT

Melanoma Patient
(~60%)



BRAF V600E

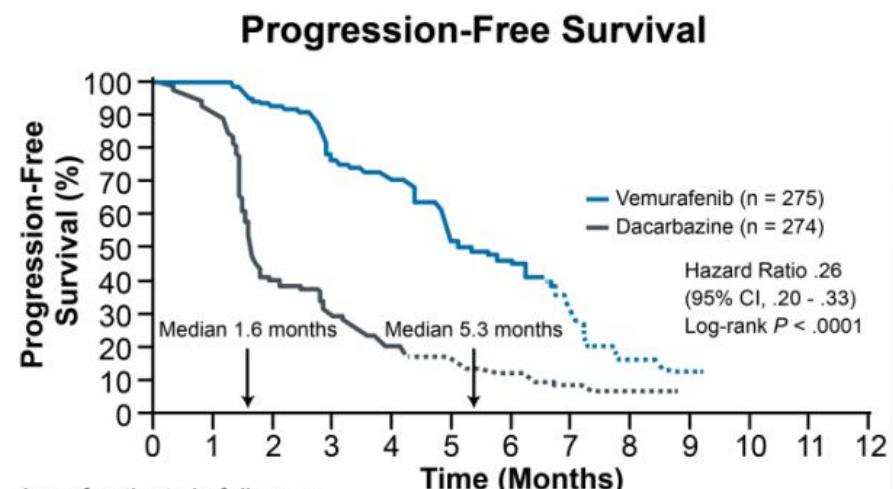


Vemurafenib

Before Treatment Vemurafenib
15 Weeks

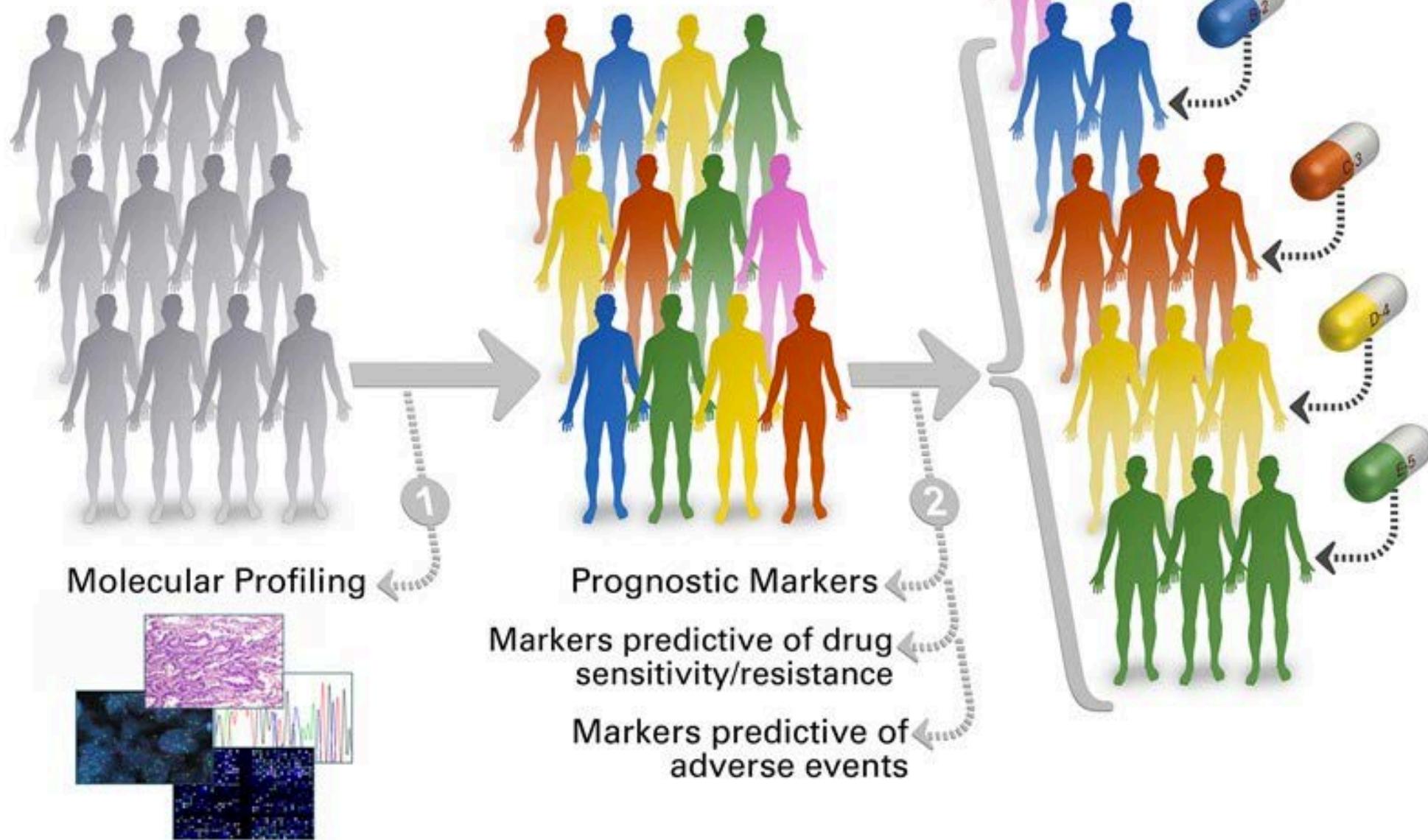


Wagle, JCO, 2011



Chapman, NEJM 2011

Personalized Cancer Therapy



WHY NOW?

The **time is right** because of:

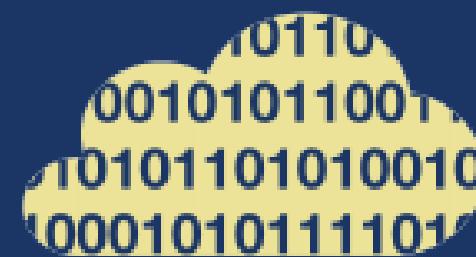
Sequencing
of the human
genome



Improved
technologies for
biomedical analysis

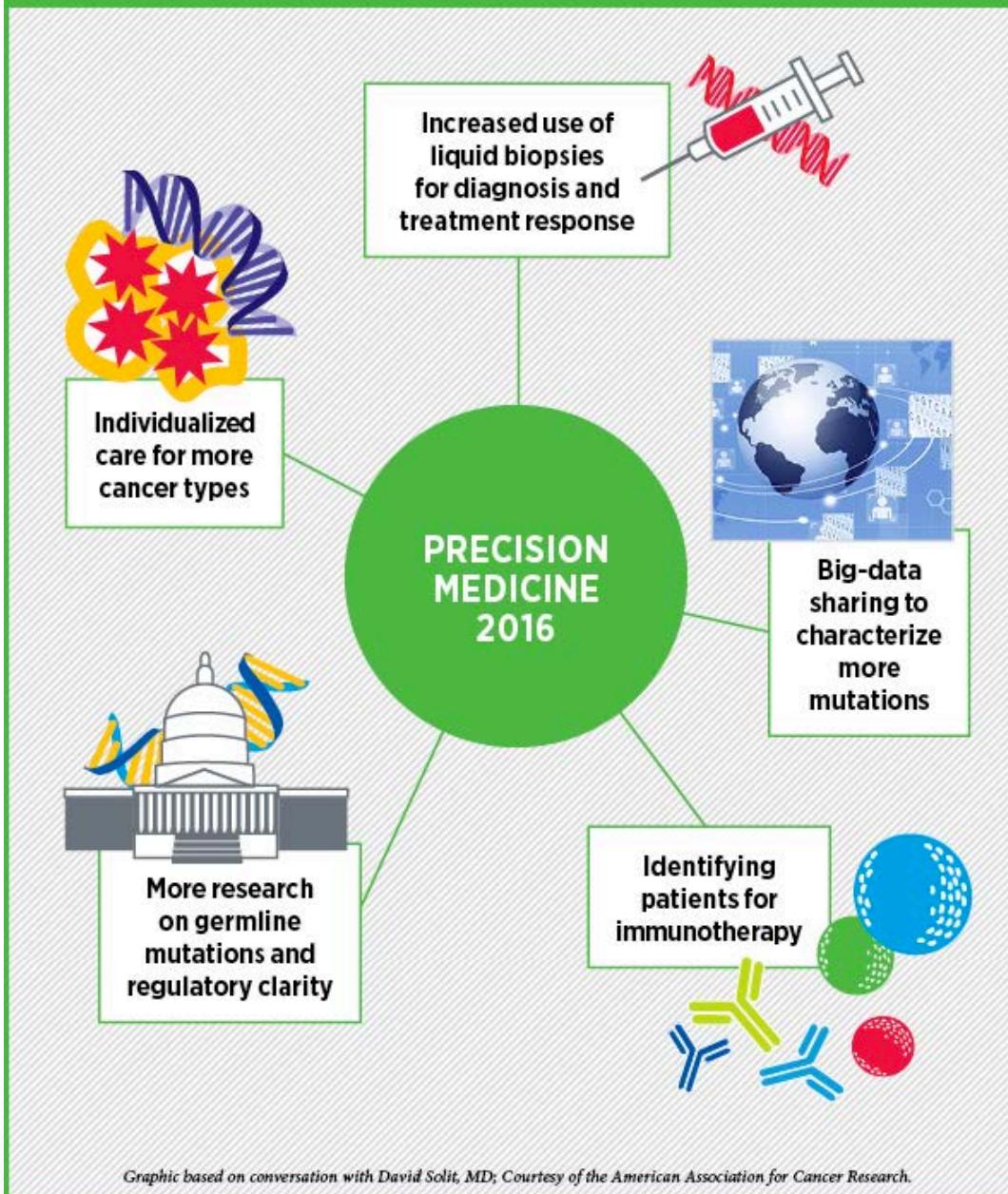


New tools
for using large
datasets



NCI Precision Medicine Initiative

PRECISION MEDICINE: WHAT TO EXPECT IN 2016?



More research

Molecular Marker

Therapy

Education

- Patient
- Clinicians

Regulatory Policies

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