

The University of New Mexico Comprehensive Cancer Center

The Official Cancer Center of the State of New Mexico

**Consortium Partners: Lovelace Respiratory Research Institute,
Los Alamos National Laboratory, Sandia National Laboratories**

Leadership ABQ, Albuquerque Chamber of Commerce



Cheryl L. Willman, MD

The Maurice and Marguerite Liberman Distinguished Chair in Cancer Research
UNM Distinguished Professor of Pathology and Internal Medicine
Director and CEO, UNM Comprehensive Cancer Center



15 YEARS AGO WE PROMISED

That with your support, we would build New Mexico's finest and most comprehensive cancer treatment program to assure that *all* New Mexicans would have access to world class cancer care and benefit from advances in cancer research, *right here*, in our home state, surrounded by families and friends who love and support them

AND WE DELIVERED!



**In 2015, the UNM Cancer Center Achieved Federal
Designation as a
National Cancer Institute Comprehensive Cancer Center**

**The UNM Comprehensive Cancer Center is One of Only
45 Cancer Centers in the Nation (Top 3%) to Achieve
“Comprehensive” Status and Certification**

UNMCCC: Leadership Team



Cheryl Willman, MD
Director & CEO



Richard Lauer, MD, FACP
Chief Medical Officer



Olivier Rixe, MD, PhD
Associate Director,
Clinical Research



Alan Tomkinson, PhD
Associate Director,
Basic Research



Anita Kinney, PhD, RN
Associate Director,
Cancer Population
Sciences



Scott Ness, PhD
Associate Director,
Shared Resources



**Angela
Wandering-Ness, PhD**
Associate Director,
Education, Training



Carolyn Muller, MD
Associate Director,
UNM Women's
Cancer Center

UNMCCC: Leadership Team



Linda Cook, PhD
Cancer Control
Research Leader



MaryAnn Osley, PhD
Cancer Genetics,
Epigenetics & Genomics
Research Leader



Steve Belinsky, PhD
Cancer Genetics,
Epigenetics & Genomics
Research Leader



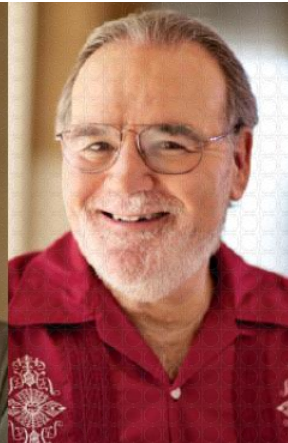
Bridget Wilson, PhD
Translational Cancer
Biology & Signaling
Research Leader



Eric Prossnitz, PhD
Translational Cancer
Biology & Signaling
Research Leader



Renata Pasqualini, PhD
Cancer Therapeutics
Research Leader



Larry Sklar, PhD
Cancer Therapeutics
Research Leader



Wadih Arap, MD, PhD
Distinguished Scientist
Translational Research



Cosette Wheeler, PhD
Distinguished Scientist
Public Health/Population
Research

UNMCCC: Senior Staff Leaders



Rodney Martinez
Chief Financial Officer

Rae Ann Paden, MPH
Chief Administrative
Officer



Teresa Stewart, MHA
Administrative Director
Clinical Research Office

**Melissa Fitzmaurice
Neligan, MPH, CRA**
Director, Research
Administration

Justin Schroer
Director of Development

A National Comprehensive Cancer Center:

1. Delivers the highest quality, integrated, cancer diagnosis and treatment by teams of cancer physicians (medical, surgical, gynecologic, pediatric, and radiation oncologists) who work together with nurses, pharmacists, and supportive care staff (nutrition, psychosocial support), to develop an individualized treatment plan for each of our patients.

At UNMCCC: New Mexico's largest team of cancer physicians, 134 cancer doctors in every cancer specialty recruited from the finest medical schools in the nation, provide care to more than 11,000 cancer patients each year from every county in New Mexico in > 135,000 ambulatory clinic visits.

A National Comprehensive Cancer Center:

2. Conducts world class cancer research, in our laboratories, clinics, and communities, to discover the causes and cures for cancers particularly affecting New Mexicans, to overcome New Mexico and the nation's cancer burden, and to promote economic development.

At UNMCCC: Supported by \$72 million annually in federal and private research funds, 128 scientists work with partners at LANL, SNL, LLRI, and State Universities to discover the causes and develop more effective cancer treatments.

At UNMCCC: We have developed new diagnostics and drugs for leukemia, breast cancer, ovarian cancer, prostate cancer, liver and pancreatic cancer, brain cancer, and melanoma.

At UNMCCC: Since 2010, UNM cancer scientists have been awarded >50 new patents, with 117 patents pending, and have started 13 new biotechnology companies.

A National Comprehensive Cancer Center:

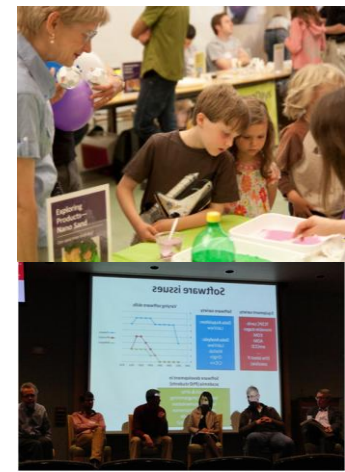
3. Provides access to patients in its region to the newest and most effective cancer prevention and treatments in cancer clinical trials sponsored by the National Cancer Institute, Pharmaceutical Industry, and UNM Cancer Center.

At UNMCCC: Working with community health systems, we built the New Mexico Cancer Care Alliance, a statewide clinical trials network providing access to new cancer drugs and treatments in over 160 clinical trials each year. The NCI deemed this an “exemplary national model for cancer health care delivery.”

A National Comprehensive Cancer Center:

4. Educates, trains, and mentors the next generation of cancer physicians, scientists, nurses, pharmacists, and healthcare professionals to assure that New Mexico and the nation have a highly qualified healthcare workforce.

At UNMCCC: Since 2010, UNM has trained 276 cancer scientists (Masters, PhDs and fellows) and 158 cancer health care professionals (physicians, nurses, pharmacists).



UNM COMPREHENSIVE CANCER CENTER



NEW PROJECTS AND PROGRAMS

- **CLINICAL FACILITY EXPANSION**
- **NEW CANCER CLINICAL SERVICE LINES**



Expansion of UNMCCC Clinical Facility and New Cancer Programs:

- 2014: Project Approved by UNM Regents, HED, NM State Board of Finance
- 2015: \$12M Contract Awarded to Jaynes Corporation
- 11/15/2016: Completion

2nd Floor:

- The UNM Women's Cancer Center (Breast, GYN Cancers)
- Cancer Surgery Specialty Clinics (Orthopedic, GI/Liver, Thoracic Oncology):
 - Head and Neck Cancers with Dental Medicine and Maxillofacial Reconstructive Surgery
 - Genitourinary Cancers: Prostate, Bladder, Kidney

4th Floor:

- State's Only Accredited Bone Marrow /Stem Cell Transplantation and Cell-Based Immunotherapy Program
- Phase I (First in Human) Clinical Trials Unit
- Infusion Expansion (38 Additional Chairs; 66 Total)

Additional Cancer Clinical Service Lines:

- Adolescent and Young Adult Cancer Clinic (Age: 15-30 Years)
- Neuro-Oncology Clinic: Brain and Spinal Cord Tumors
- Cancer Survivorship, Palliative Care, Rehabilitation Clinics



Matthew Fero, MD, PhD
Fred Hutchinson Cancer Center

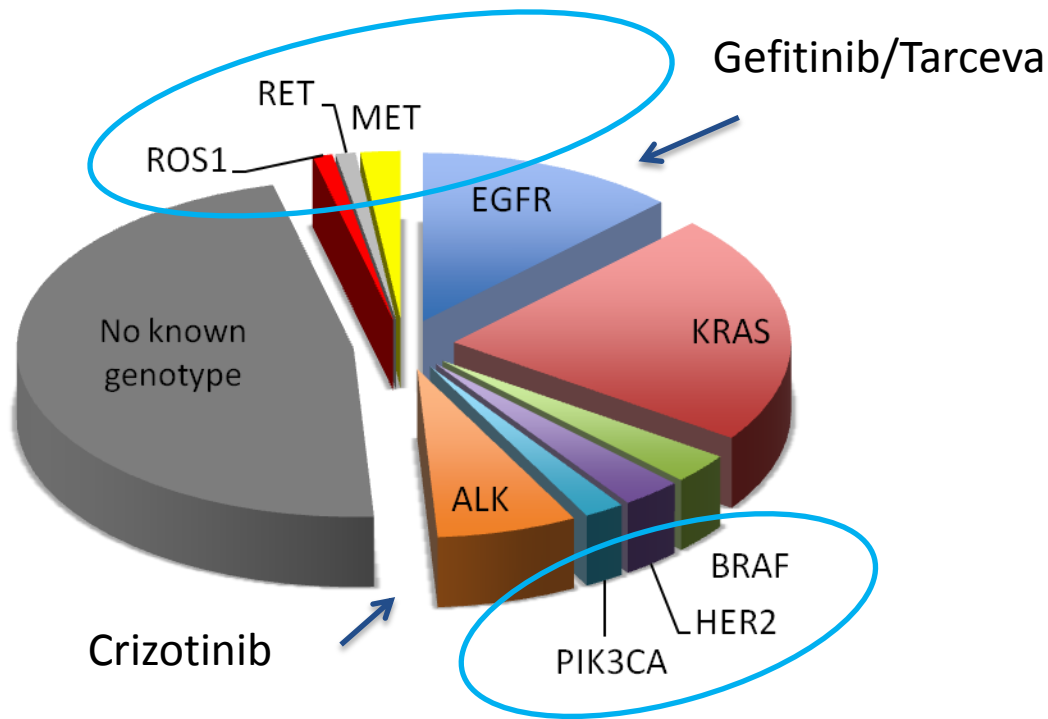
UNM COMPREHENSIVE CANCER CENTER



DELIVERING NEW CANCER TREATMENTS

- **PRECISION ONCOLOGY**
- **GENOMIC SEQUENCING OF HUMAN CANCERS**
- **NEW THERAPIES TARGETED TO SPECIFIC GENOME MUTATIONS**

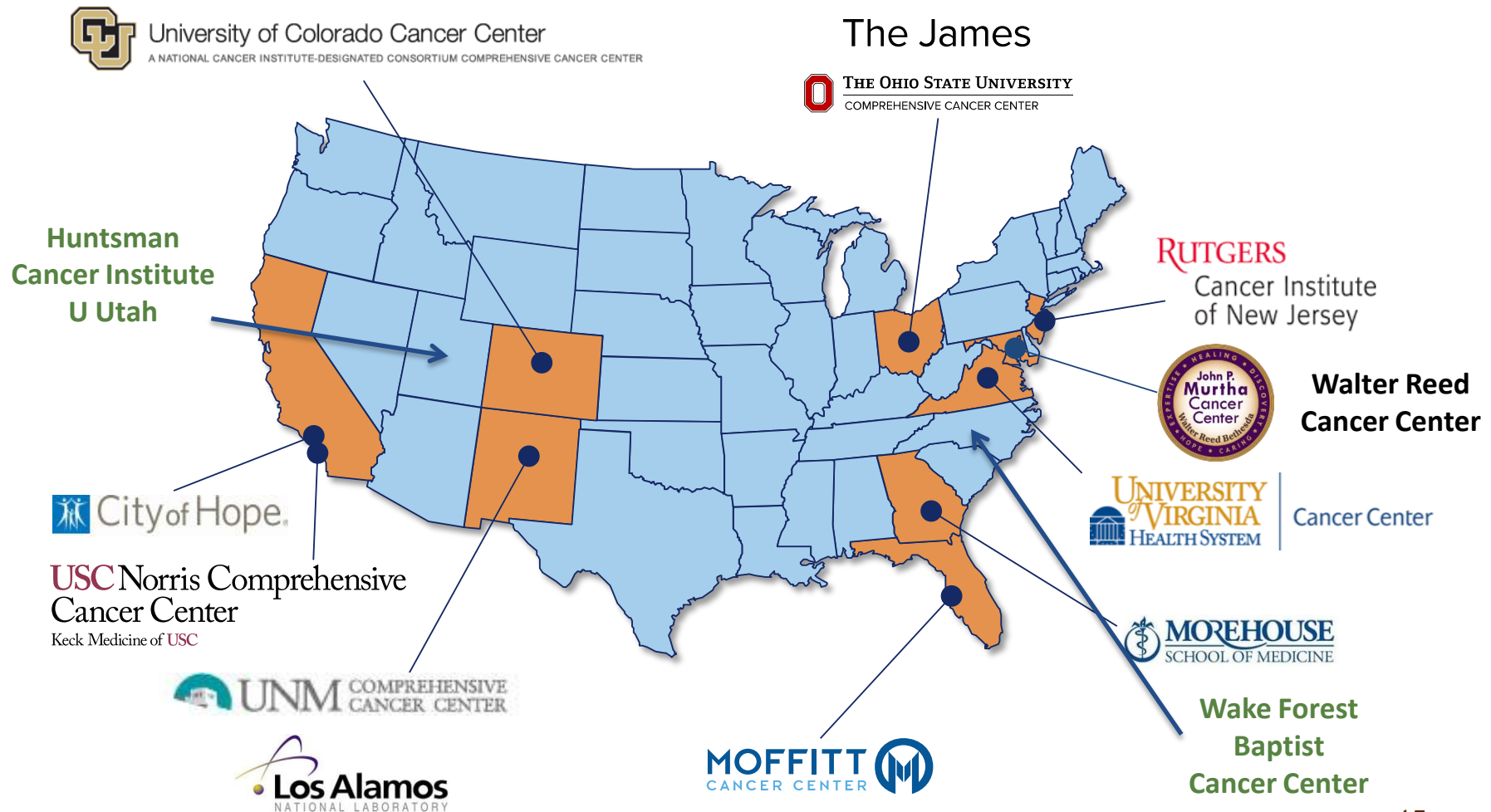
New Mutations Discovered in Lung Cancer Can Have Dramatic Responses with Targeted Therapies



Tumor Genome Sequencing to Targeted Therapy

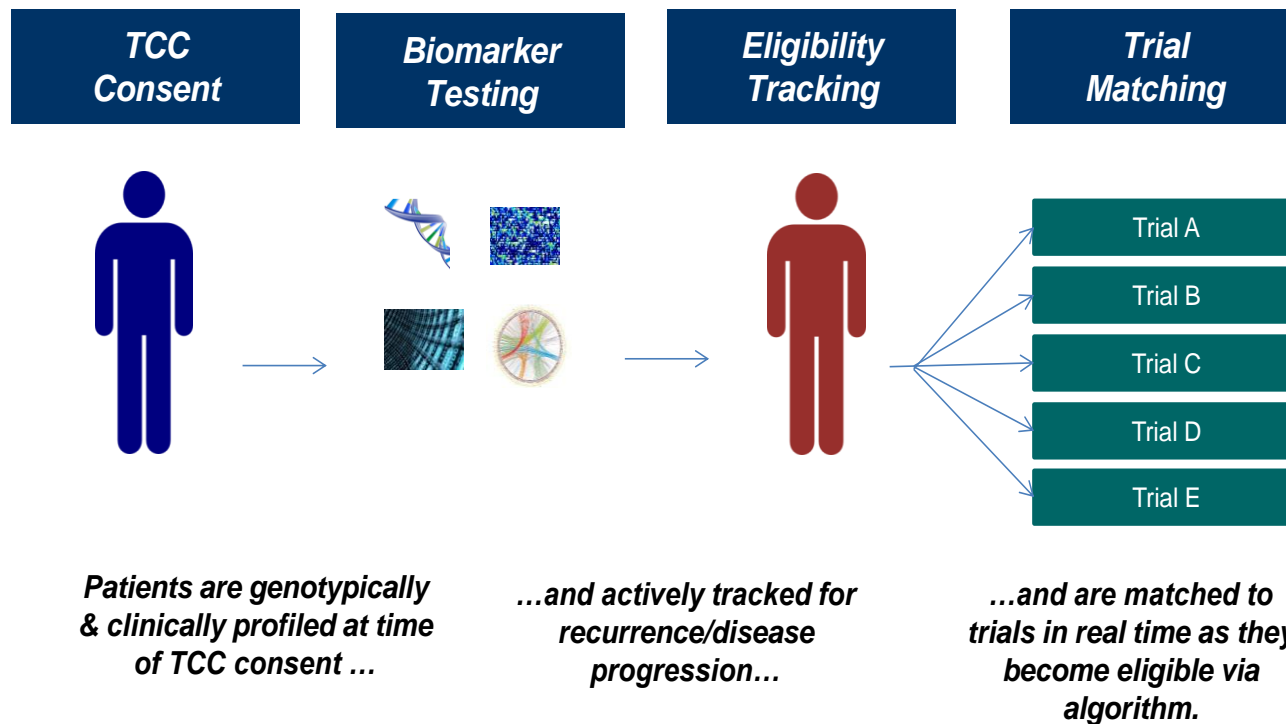
Total Cancer Care / ORIEN Network

Collaboration of 18 of the Nation's Leading NCI Cancer Centers, The Military Cancer Center at Walter Reed, the Veteran's Administration Health System



New Precision Cancer Medicine Clinical Trial Matching Opportunity: An Alliance of NCI Cancer Centers and Pharmaceutical Industry

ORIEN is launching a “cohort surveillance” to actively track patients for enrollment to biomarker driven clinical trials



Accumulation of Somatic Mutations Mutational Signatures in Human Cancer



Ludmil
Alexandrov, PhD
LANL (CGEG)
Oppenheimer
Fellow

Science /AAAS
Top Scientist
Under 30
(Biomedicine)

Current “Big Data” Capabilities at LANL:

- High throughput external network connection and capability to download petabytes of data from external sources
- High performance computational pipelines for cancer genomics analysis
- Current access for cancer genomics: 5PB data storage; “free” computational/CPU compute time
- Completed analysis of >35,000 cancer genomes (ICGC, TCGA)



Known or Speculative Causes of Mutational Signatures

Tobacco
smoking



Known or Speculative Causes of Mutational Signatures

Tobacco
chewing



Known or Speculative Causes of Mutational Signatures



Ultraviolet
light



Known or Speculative Causes of Mutational Signatures



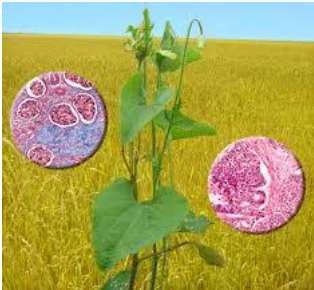
Aflatoxin



Known or Speculative Causes of Mutational Signatures

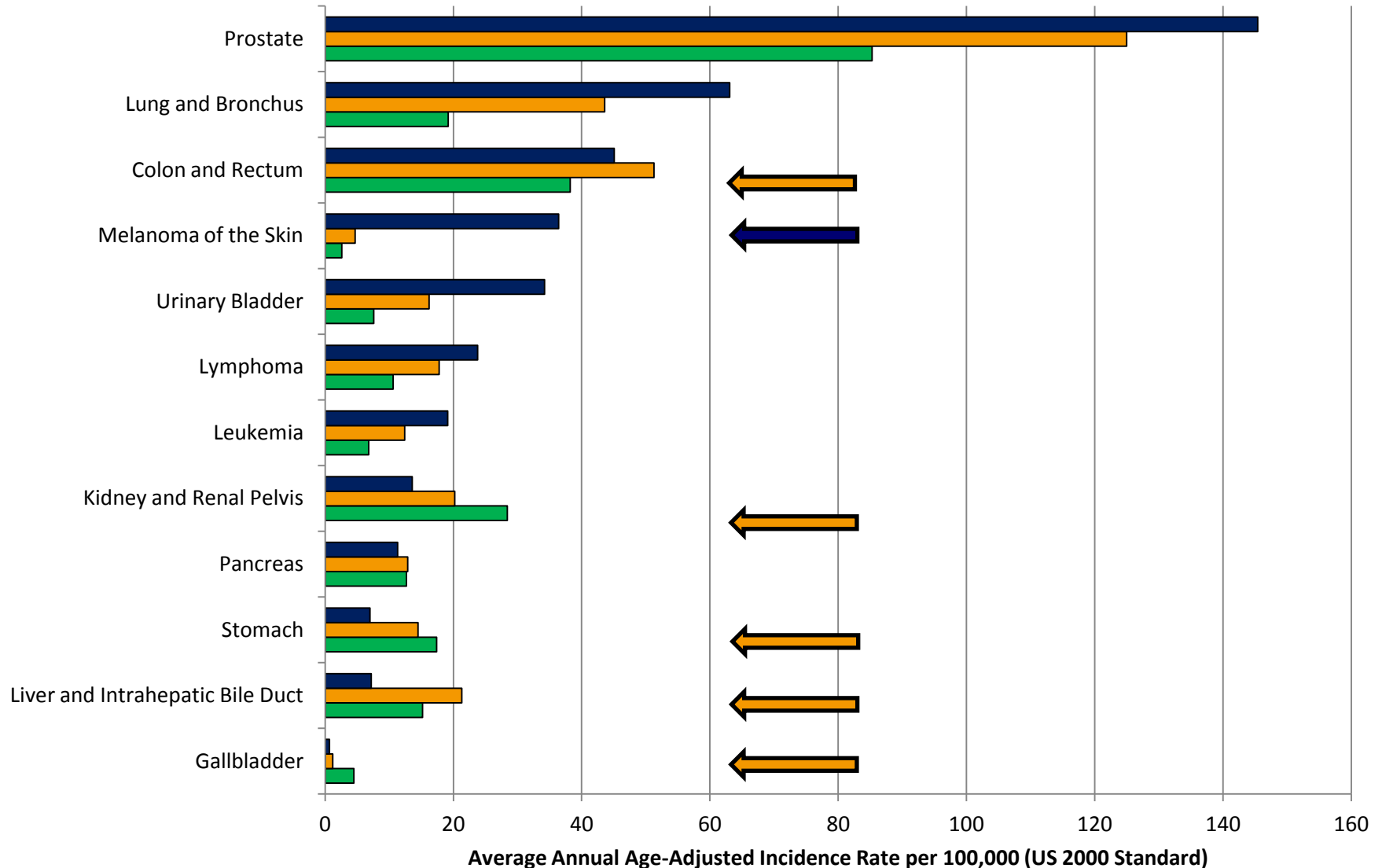


Aristolochic acid

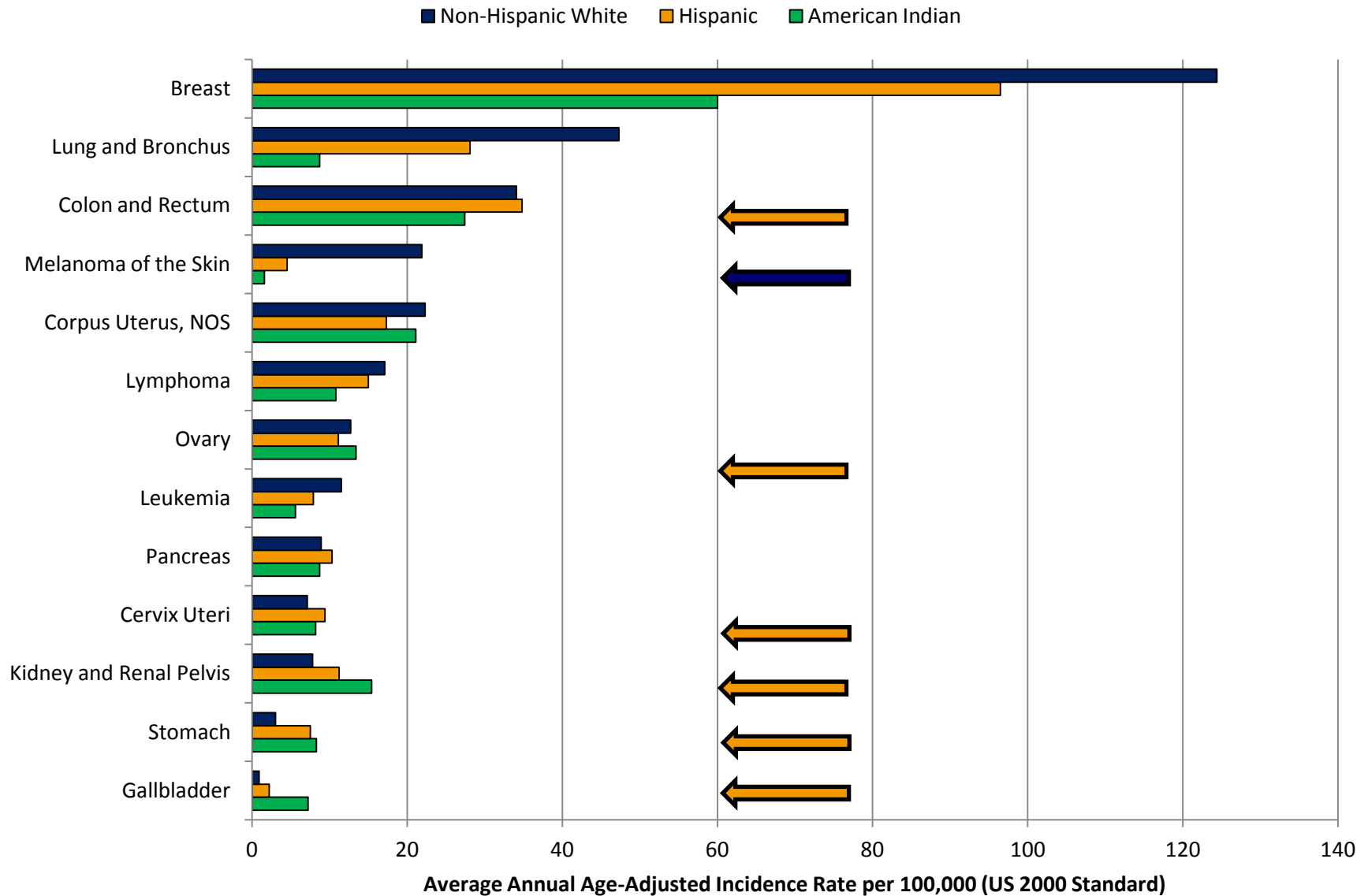


Cancer Incidence - New Mexico Males (2002-2011)

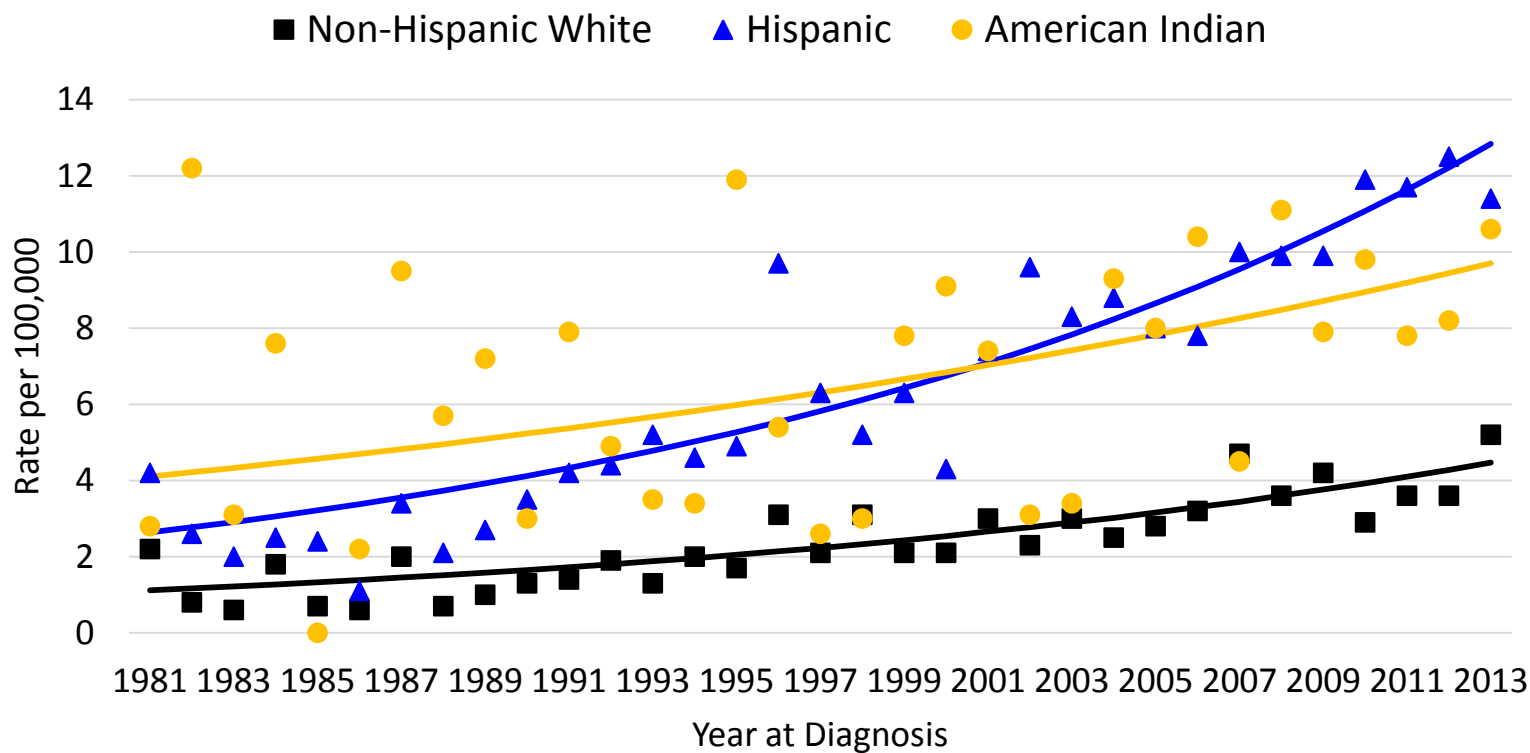
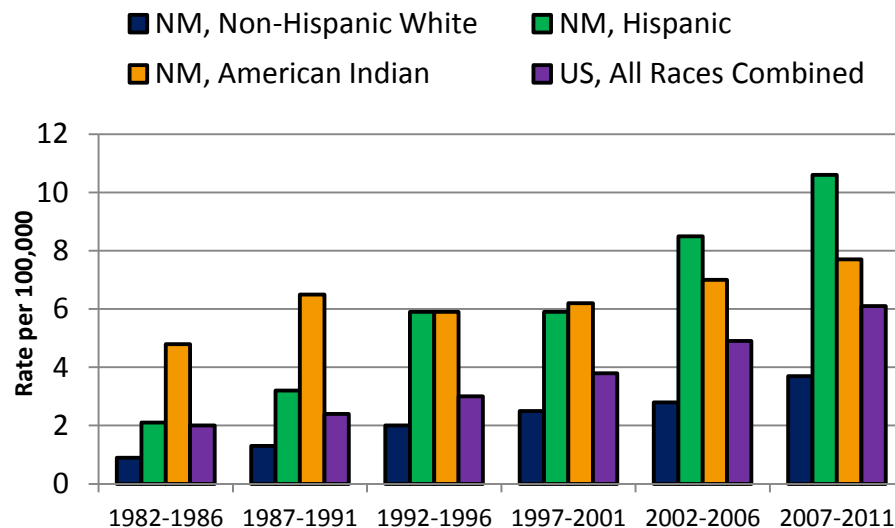
■ Non-Hispanic White ■ Hispanic ■ American Indian



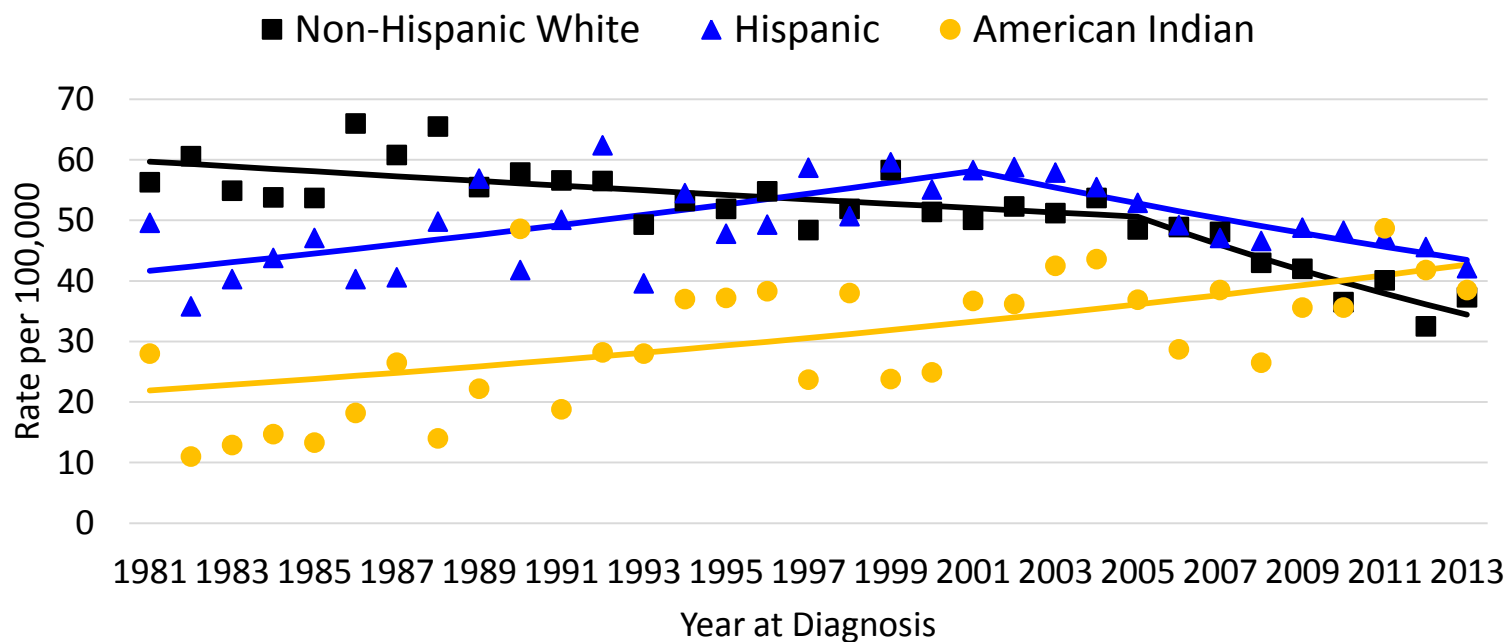
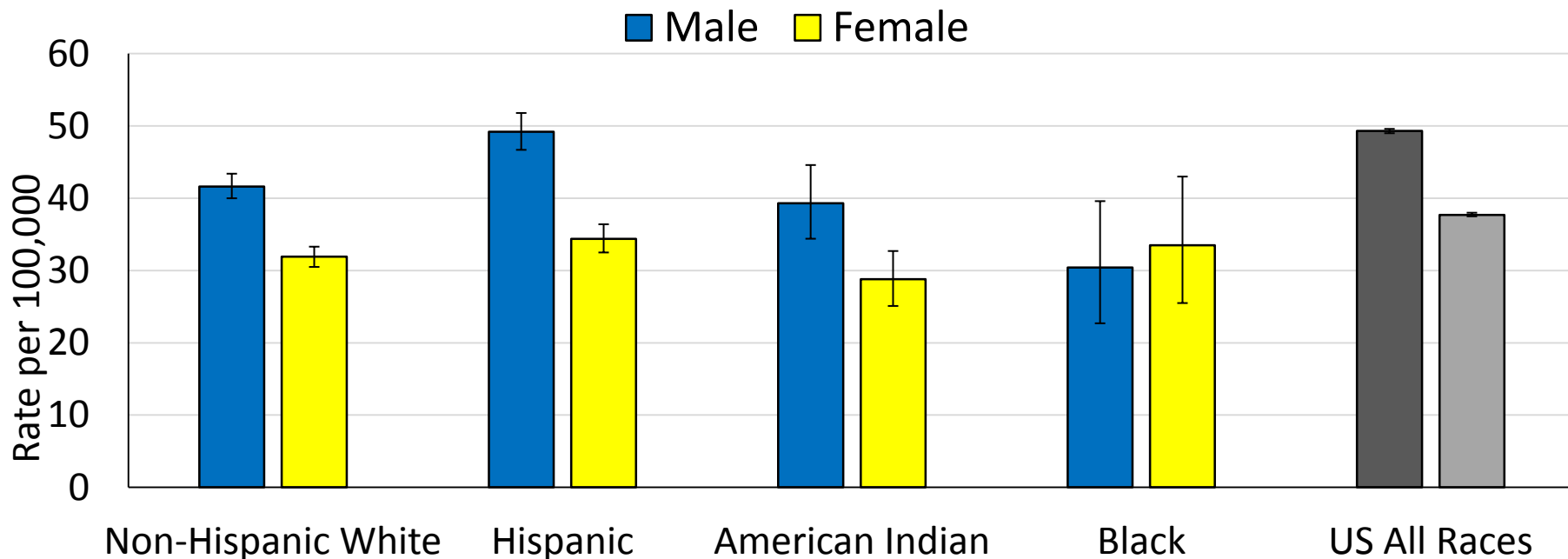
Cancer Incidence - New Mexico Females (2002-2011)



Liver Cancer



Colorectal Cancer



UNM COMPREHENSIVE CANCER CENTER



THE REVOLUTION IN CANCER MEDICINE

- **IMMUNOTHERAPY**



Olivier Rixe, MD, PhD

**Associate Director,
Clinical Research**

Paris, France

Jacque Chirac Prize

**Former Director,
Gustave Roussy
Institute**

IMMUNOTHERAPY: TARGETING PD-1 / PDL-1



- Many human cancers elicit an immune response to proteins on a cancer cell surface
- How do we harness that to kill cancer cells, regardless of the genomic mutations present?
- HOWEVER, Cancer cells may also evade killing by the immune system by expressing PD-L1 and blocking anti-cancer T cells
- New anti PD-L1 treatments are having dramatic impacts in lung kidney, melanoma, and other cancers

